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THE INDIA RUBBER PUBLISHING CO.

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**M**OST men believe that their own line of business is far less remunerative and presents more difficulties than any one of a dozen others which their neighbors follow. Thus, the maker of machine tools, for example, wishes he were a rubber manufacturer. He and nearly all others not engaged in rubber think it is a business of singular simplicity, free from minor troubles, and profitable beyond the ordinary industrial dream. Hence the general impression that rubber goods showing such great profits, are of course extravagantly high in price. A fragmentary knowledge of rubber compounding, of reclaimed rubber and its ilk, also fosters the belief that little real rubber is used in most goods. As for the last-mentioned heresy, it may be said that all of the crude rubber produced is used very promptly, and the purchaser gets quality and quantity when he pays a fair price for them.

In regard to large profits in any staple line of rubber work, that day has long since passed, as it is probable that a net profit of 6 per cent. on the world's business would be a reasonable estimate.

To those who, standing on the outside of the business, are figuring its big gains, should be given a lesson in manufacturing losses.

The constantly increasing price of the crude material, it will be admitted by all, necessarily increases the price of finished goods to a degree. But that is only the beginning. Once the rubber is purchased there comes into play the important item of shrinkage. This may be safely set down as 25 per cent. In other words, the purchaser of one pound of crude rubber actually receives only three-fourths of a pound, so that the market quotation, the foundation upon which the critic builds, is of no value at all. When he reads, "fine Pará \$3 a pound," he should read, as must the manufacturer, "fine Pará (less shrinkage) \$3.75 a pound,

Another fact that he is likely to be totally ignorant of, nor in this is any manufacturer likely to inform him, is the added cost that comes through damaged goods.

Factory damage is a bugbear to the whole industry, and is feared and guarded against on every side. There are, for instance, goods made up, but not vulcanized, that are defective and are "scrapped." This is not usually serious, as often the rubber can be reworked, with only a loss of a few cents a pound. When, however, goods are discovered to be worthless after being vulcanized the loss is very great. Then, a compound worth a dollar a pound before vulcanization may as scrap be worth only five cents a pound. In other words, there is an actual loss to the factory of 95 cents a pound, in addition to the labor and other expense.

A third type of loss from damage, and an infinitely troublesome one, occurs when goods that have passed all inspection and have been sent out as perfect, suddenly deteriorate from some hitherto unsuspected cause and are thrown back upon the manufacturer.

There might right here be added a fourth class—goods wilfully injured by purchasers after partial use, together with false claims for damage, both of which manufacturers are often obliged to shoulder for policy's sake.

It would not be fair to say that all suffer alike from damage, but it is perfectly true that all suffer. The history of the trade affords instances of capital loss and companies wrecked from the above causes alone.

Considering the fact that every known kind of rubber, nearly all of the plastics, all types of metallic oxides and earthy materials, and various oils and waxes, are used in rubber compounding, that they require special processes in manipulation and a great variety of heats in vulcanization, it is a marvel that the percentage of perfect goods is so uniformly high.

The damage danger is ever present, and those who congratulate themselves upon a period of freedom will do well to "knock wood," for it comes in the most mysterious of ways. For example, a maker of sheeted fabrics had thousands of yards of material thrown back upon his hands. The sheetings had left his factory apparently perfect. They came back in six weeks'

time, the rubber as rotten as blotting paper and possessed of a singularly offensive smell. A searching investigation finally located the trouble. A keg of gear grease had been shipped to the manufacturer in place of palm oil, and his compounder did not know the difference. Of course, this is an argument in favor of the necessity for a chemist; but that is another story.

Get any one of the old superintendents gossiping and his tales will be of hundreds of thousands of dollars' worth of goods scrapped, or perhaps burned up. And this is why in part, only in part, that rubber goods cost more than the outsider believes to be just or right.

#### THE ASKING OF QUESTIONS.

THE broad acceptance of the dogma that "Any fool can ask questions" is open to severe criticism, when it is remembered that investigation itself is only a quest. Certainly, any fool can ask and any other fool can answer foolish questions. Questions and answers follow parallels of comparative intelligence. The desire to penetrate the why of anything is the beginning of wisdom. Its presence in wise man or fool is to be commended, for it is education's most prolific germ. The whole development of the rubber industry, from the time of Good-year to the present, rests upon ceaseless questioning. The long mooted plan for an international school to inculcate the knowledge of rubber manufacture, excellent in theory, were it realized, would succeed in turning out a few real questioners. They would be of value to themselves and to the trade. The others who learn by rote, who accept statements without question, would swell the numbers of those who cherish secret compounds, use "phony" weights and false thermometers—high priests of compounding mysteries, that they themselves do not comprehend.

Thirty years ago, a certain rubber company essayed the then difficult feat of vulcanizing rubber to iron so that it would not strip off. The superintendent, a "mystery man," swabbed the metal surface with beef liver, and when it was bloody enough dried it thoroughly. Then he put the rubber on under pressure and vulcanized it. Sometimes it stuck and sometimes it did not. Did he ask himself or anyone why it succeeded or why it failed? Not he. It was a mystery, a fetish, a part of the worship of the ancient divinity Rule-of-Thumb.

He had an employé, however, who was forever asking "fool questions." This youth noticed that a spot of iron that was touched with blue vitriol presented a surface to which rubber adhered always and most tenaciously. He at once wanted to know why, and quizzed and questioned until he extracted the factory theory that "it cut away the grease and opened the pores of the iron." Not quite satisfied, he sought out a professor of chemistry in a neighboring town, learned about acids in general, about copper solutions in particular, about the union of

copper with sulphur in rubber during vulcanization, and evolved a perfectly sound, scientific process.

When the "Shoe Associates" controlled the rubber shoe industry of the United States, a compound, of which they made their goods, consisted of rubber, whiting, lampblack, litharge, barytes, lime, sulphur and tar. All except the rubber and tar were dumped into a great iron tank and thoroughly mixed together by means of a hoe in the hands of a husky dorky. And the way the lampblack escaped and penetrated to every part of the factory can hardly be described. The resultant mixture, called "paint," was weighed out in six-pound batches for admixture with rubber. It was an awkward, unsatisfactory method, but Nathaniel Hayward, Leverett Candee and others of the pioneers evolved it, made it sacred, and no one presumed to question it. No one? On second thought there were two who mentally questioned both process and compound. One, a Connecticut Yankee, demanded of each ingredient what good purpose it served. All proved their value there with the exception of barytes and lime. Those two were eliminated and the goods became livelier and better. The other questioner, a Rhode Island Celt, wanted to know if the mixing mill could not do all of the amalgamating of the dry ingredients as they went into the rubber. The answer was "Yes," and the tank and the "paint" became ancient history.

Multiply the above questions and answers by a million and the world's progress in all lines of rubber, from forest to consumer, will be expressed. Moreover, the further expansion of the business, indeed its continuance, depends upon the constant questioning of managers, superintendents, chemists, planters, machinists and inventors. Nor is anyone barred. The field is free for all, and for those who question wisely and answer well greater rewards are in prospect than ever before in the history of the industry.

#### WHEN SYNTHETIC RUBBER IS A FACT.

IT IS the common thought that were synthetic rubber to become an accomplished fact not only would the inventor reap an enormous pecuniary reward, but rubber plantations would be abandoned and the gathering of wild rubber cease to be remunerative. It is more than probable that none of these things would happen. Our basis for this belief is a consideration of the camphor industry, which in many respects is similar to that of crude rubber production.

Camphor is, of course, a gum found in a forest tree growing in the Japanese island of Formosa. For years the trees were cut down and the chips steamed, the vapor being distilled by the crudest possible means. As the accessible forests of camphor trees disappeared under this work of destruction, the Japanese drove the bloodthirsty aborigines back, and opened up new tracts where the trees were found. Not only that, but they

planted some 12,000,000 trees, and planned to monopolize the business of camphor extraction. Incidentally, they advanced the price of the product to about double its former cost.

Attracted by the possible profit in camphor growing, the alert scientists at the head of the English, German and Italian agricultural developments began to experiment. They found that the trees would flourish in the Far East, in German Africa, in the West Indies and in Italy. They further learned that camphor could be extracted from the leaves without in any way injuring the tree.

Another set of scientists, however, had been at work on the synthesis of the gum, and some six years ago the feat was accomplished. Two years later there appeared upon the market synthetic camphor just as good in every respect as the natural product.

The synthetic gum, however, did only one thing. It brought the high monopolistic price down to its normal level, and will forever keep it there.

The wild camphor in Formosa will still be gathered, and will pay. The 12,000,000 trees planted there will in time produce profitably, and the plantations in the Far East, in Africa and in Italy will show good dividends. So it would be with synthetic rubber. It would sound the death-knell of any possible crude rubber monopoly and wonderfully steady prices. Rubber would still come from the Amazon, from the Congo; the great plantations in the Far East, in Africa and the rest of the tropical world, would still produce abundantly and profitably. Instead of dreading its advent, the world should desire it.

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#### HIGH-PRICED RUBBER AND SOME OF ITS RESULTS.

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WHEN rubber was fifty cents a pound, that is fine Pará rubber, and the valuable sorts were a drug on the market, it was used in many places where it was far from being a necessity. When, however, its price steadily climbed, manufacturers were obliged to use it where it was necessary and only in such proportions as were absolutely demanded. For certain goods, where a high degree of elasticity was demanded, the regular amount of rubber, no matter what the price, appeared. But where the qualities demanded were not a high degree of elasticity, but were simply plasticity, insulation, waterproofing, et cetera, it was found that many other plastics in conjunction with rubber could be used. They not only saved to the manufacturer thousands of pounds of high-priced gum, but gave to the consumer an equally good or better product at an appreciably lessened cost.

It came about, too, that the great quantities of unvulcanized cloth scrap, often burned up to get it out of the way or only used in a half-hearted sort of way, for something like anti-rattlers or rubber cuspidors were suddenly looked upon as valuable and reclaimed and used to advantage.

The story of the reclaiming of vulcanized scrap has been told so many times that its mention here is simply to point to one of the greatest economies brought about through the high price of crude rubber.

Take for example: the foot-wear trade. When rubber was low the goods were heavy and the compounds extravagantly rich. Driven to economy in the use of rubber lighter weights were produced, compounds revised and goods turned out that not only looked better, but gave longer service. Here, too, other rubbers besides fine Pará were found available and other plastics employed that notably increased both durability and waterproof quality.

In the line of mechanical rubber goods a book could be written covering applications of bastard gums of low-grade rubbers and of amalgamation of rubbers, that resulted in the long run in better goods.

Not only in the two great lines named, but in every part of the world's great industry the same necessity forced a like action on the part of manufacturers. This stress of circumstance obliged the maker of rubber goods to call to his assistance able chemists. It spurred tropical pioneers to send to the market scores of hitherto unused gums. It educated manufacturers so that the least of them today knows infinitely more about the rubber business than did the greatest thirty years ago.

It has often been remarked that Charles Goodyear forecasted nearly everything that would be made in rubber, and it is true. Were he alive today, his knowledge of crude rubber and of compounding would not be sufficient to secure him a position as superintendent of the smallest factory in existence making the simplest line of goods.

It is not intended to convey here the thought that high-priced rubber is a blessing. It has resulted in good, because of the versatility and capability of the men engaged in the trade, together with the numberless "assistants" that nature supplies to the compounder. It would seem, however, as if the end of nature's resources and of man's ingenuity has been very nearly reached. If such is ever the case the result of abnormally high rubber would be a disappearance from the market of rubber goods in the direct ratio of their necessity to humanity.

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#### TRAVEL AND EXPORT TRADE.

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THOSE who in the past claimed to have the best interests of the United States at heart were forever lamenting the failure to open up foreign markets for our products. Nothing was left unsaid that could be said. Tons of export sermons, good and bad, were scattered broadcast, but the great mass of American manufacturers hustled right along supplying the home market and doing well at that. The English, German and Belgians, however, built up big businesses in countries other than their own. It is interesting to note that the beginnings of the foreign trade of the three peoples, named were when the business men thereof began to travel. Not from mass meetings, associations nor tracts came the impulse, but because they went in person, saw the needs and instantly wished to supply them.



Today any British sea captain will tell you that in the last half a dozen years a fourth has been added to the three classes of globe trotters he has known—the traveling American. Not the traveling salesman, but the manufacturer who takes his vacation in winter in the West Indies, in South America, or in the Pacific; or his summer relaxation in northern Europe, China or Japan. He goes for rest, but comes back full of new ideas, greatly broadened views and with a desire to have his share of the world's trade.

It is to this fact that the growth of the American export trade should and will be attributed, and as would be expected the traveling business man is just as often engaged in the rubber business as in any other.

#### MANUFACTURING EFFICIENCY.

IN the last five years there have come into being, semi-professional gentlemen known as "production engineers," whose especial field of effort has been the great manufacturing establishments of the world. One of their particular aims has been to simplify work—or more explicitly to minimize motions. As the machinist corrects "lost motion," so they eliminate waste motions. The vaudeville sketch artist who recites "She opened her bag, took out her purse; shut her bag," etc., caricatures waste motion so that none can fail to see it. Where it occurs in industrial life, however, it is often far from apparent. Many of the most rapid workers make thousands of minor false motions in the course of eight hours, a loss of effort that is not detected either by the worker or the ordinary observer. It is here that the trained simplifier is valuable. His method of procedure is to study one phase of the work at a time. Possibly he observes 10 men, each of whom do exactly the same kind of work under like conditions. He finds perhaps that No. 3 makes the most motions; No. 7, the fewest. The average of the 10 is fair, but that does not satisfy. Taking No. 7 as a basis, the analyst goes over the work mentally again and again until he is able to cut out quite a number of false motions. Then one man is trained to do the work, making every or nearly every move count. His production, or very nearly that, is made a standard, and soon all doing that sort of work are able to equal it and with less wear and tear than before.

The efficiency problems are by no means confined to hand work. They apply to arrangement of rooms, of machines, speeds, heats, correlations of departments, inspection of product before vulcanization, to everything from coal passer to president, and the savings effected are prodigious.

FOR A GREAT MANY YEARS rubber manufacturing companies in the United States specialized along certain lines. Companies that made shoes did nothing in sundries, hard rubber, mechanical goods or any of the other rubber products. There were those who argued that by thus specializing they were able to produce a better product at less cost than if they made everything or nearly everything in rubber. Many large companies were very proud that they knew nothing of anything except their own specialty. Today, however, the spirit of progress or expansion seems to lead away from specialization. Companies that begin with one line as tires, for example, after a time add a complete line of mechanical goods. Later they create another unit for the production of insulated wire; still later they add rubber shoes. So that today the larger American rubber factories resemble in their variety of product the great European factories that make nearly everything in rubber and gutta percha.

If you are interested in the manufacture of rubber goods of any description, you will find valuable information and useful trade hints in Mr. Pearson's "Crude Rubber and Compounding Ingredients." An index of its contents will be sent you free on request.

#### SELF DEFENSE SAMPLES.

RUBBER manufacturers are periodically and semi-periodically subject to the visits of those who are interested in new substitutes for rubber. Usually the visitors are honest in their belief in the extreme value of the discovery they are showing, and it is almost impossible to explain to them the absurdity of their claims. The basis of their faith is usually a small sample of good quality product, made up of, say, 50 per cent. of Pará rubber and 50 per cent. of their material, and enough sulphur to cure it. Sometimes they show with pride a section of a tire made of the compound that has run one, two or three thousand miles. The courteous manufacturer spends hours in a vain attempt to enlighten the other as to the absolute valuelessness of his product, and fails. Later he hears of fancy prices quoted for the foreign rights, of a home company, in which are no rubber men, who are secretly erecting a factory, and then an eloquent silence.

What is needed is a line of self-defense samples to off-set those of the substitute finder and to enlighten him. They may be easily prepared.

Take, for example, 50 per cent. of finely sifted road dust with an equal quantity of Pará rubber, with sulphur sufficient to vulcanize. Then when the substitute man shows his sample the manufacturer can match it. He may even have prepared tests as to wear, resiliency, etc., and will have little arguing or explaining if his visitor is honest, for nine times out of ten the manufacturer's sample will be the best. Coal ashes, powdered brick, anything common and dry may be used, and the illustration will be just as illuminating.

#### INDIA-RUBBER GOODS IN COMMERCE.

##### EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of January, 1911, and for the first seven months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
January, 1911 .....	\$169,351	\$76,694	\$475,254	\$721,299
July-December .....	1,045,783	1,523,347	2,922,464	5,491,594
Total, 1910-11 .....	\$1,215,134	\$1,600,041	\$3,397,718	\$6,212,893
Total, 1909-10 .....	1,096,459	1,371,199	2,739,953	5,207,611
Total, 1908-09 .....	803,067	958,671	2,088,524	3,850,262
Total, 1907-08 .....	844,811	1,252,153	2,209,938	4,306,902
Total, 1906-07 .....	691,286	858,714	2,040,592	3,590,592

The above heading "All Other Rubber," for the last seven months, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
July, 1910 .....	\$146,080	\$56,096	\$202,176
August .....	151,468	71,486	222,954
September .....	133,735	39,457	173,192
October .....	103,788	33,469	137,257
November .....	160,214	37,962	198,176
December .....	144,645	47,325	191,970
January, 1911 .....	175,743	33,227	208,970
Total .....	\$1,015,673	\$319,022	\$1,334,695

AN article on the Acre territory in the *Bulletin* of the Pan American Union (Washington: January, 1911) states that the rubber tree—*Hevea*—selected for tapping in that region are usually from 30 to 40 years of age, and are expected to yield for twenty years, after which they become useless. An interesting point bearing upon the development of the Acre is the statement that there are already about 25,000 Europeans, Brazilians, and Asiatics in the territory. While not so stated, it is probable that these new settlers have come mostly from Brazil.



## India-Rubber in Dutch Guiana.

By the Editor of "The India Rubber World."

### FOURTH LETTER.

By Launch to La Liberté.—Bananas and "Hevea."—A Plantation with Water Roads.—A Launch Trip Up the Para River.—Plantation of Crocodiles.—Pole Bridges.—Waterland.—Voorburg.—Coolie Drawn Punks.—Up the Comowynne.—Katwyk.—A Peep at Pictororg.—Javanese Coolies.—A Coolie Festival.

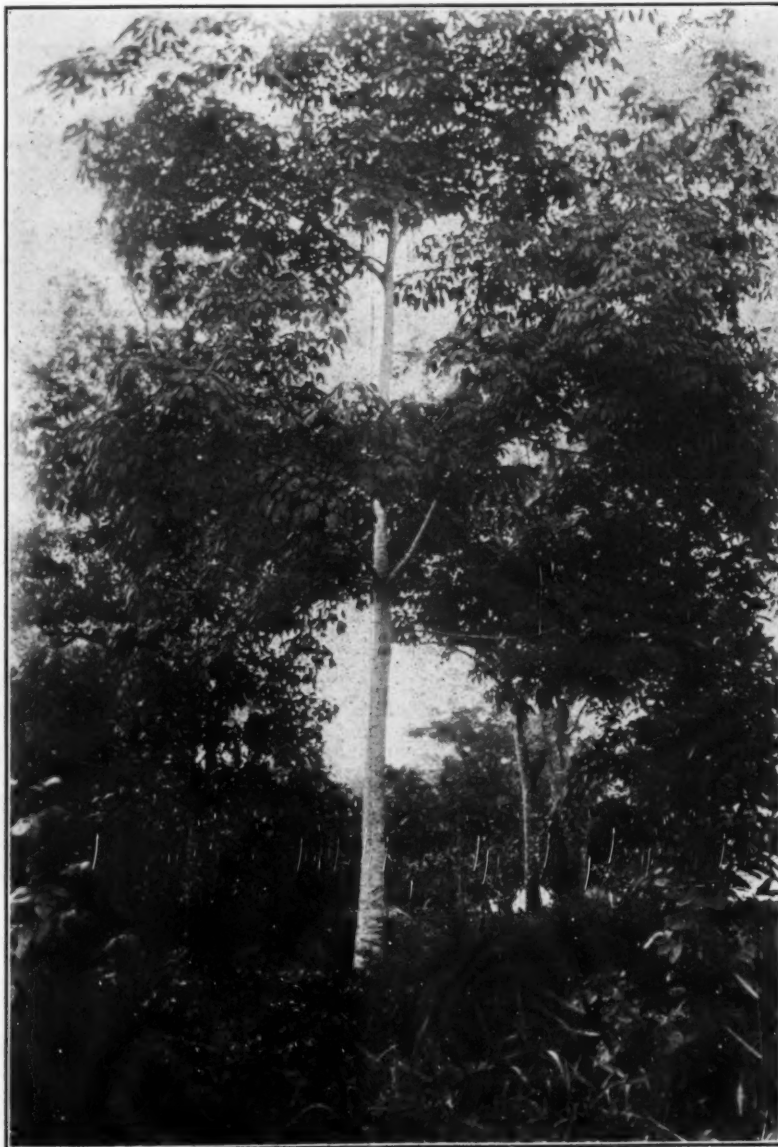
ONE of our morning trips was to a large cocoa plantation, La Liberté, owned by the Balata Man, to see his plantings of Pará

rubber.

The little steam launch *Ellen*, moored to the slippery tide-washed steps of the Club House *stelling*, was our meeting-place soon after early coffee. Then, as she chugged upstream against the outgoing tide, we had breakfast on the little awning-covered quarterdeck. The plantation was about an hour up the Suriname, and had a substantial landing pier, down which a flight of steep wooden steps ran into and under the water, the last three or four steps being always coated with river slime. This plantation had once been a great sugar estate, the grinding being done by a tide mill. The present owner had bought it for coffee, and that not being profitable enough he had turned to cocoa. A most productive and beautiful estate was the result, until suddenly the dreaded witch-broom made its appearance. When the cocoa tree throws out green shoots of three or four times their normal diameter, adorned with abundant leaves twice as big and twice as glossy as the rest of the tree bears, that is the witch-broom. It sucks the vitality from the trees until it stops fruiting. The disease is said to have had its beginning in the Guianas and has spread like wildfire and done incredible damage. By pruning and spraying it can be cured, but the

menace of its presence is turning more than one cocoa estate into a rubber plantation. Our host, like a true fighting Dutchman, had no thought of abandoning his profitable cocoa, but was curbing the pest with one hand and planting rubber with the other. He was also planting bananas, as the ubiquitous fruit company have a long time contract for many thousands of

bunches from this territory, and every Dutch boat going north carries its quota. The bananas were interplanted with young *Hevea*, drawn from a nursery of 25,000 trees that had some time before been established on the estate. It seemed odd, but the seeds for the planting came from far away Ceylon. One would imagine that Guiana's near neighbor, Brazil, with *Hevea* seeds rotting on the ground by the hundred thousand, would be the natural source of supply, but such is not the case, and seed shipments of from 20,000 to 1,000,000 are constantly made from the Far East. They cost about a cent apiece on arrival, and sometimes 5 per cent. of them germinate and sometimes 95 per cent. That depends upon care in gathering and storing, in packing, and in a measure on the season of the year in which they take their journey. It is affirmed by planters that seeds that come by way of England in the cold weather suffer most.



SIX YEAR OLD HEVEA TREES

There were two systems of canals on this estate—the drainage canal with flood-gates housed under trim brick porticos standing sentinel along the river bank; and a wide traffic canal that divided the plantation in half, together with several lengthy laterals, giving easy access to all parts of the estate.

After walking through the cocoa, we entered a long punt, paddled by a pair of muscular Chinamen, and did the whole plantation by water. It was very beautiful thus passing through the cocoa groves, from the midst of which grew the lofty dadap trees, thence into and through a belt of uncleared forest, somber, cool, a tangle of tree trunks and bush rope, the whole decorated with strange flowers, huge fleshy leaves and fast clinging orchids.

I forgot to say that our party was reinforced by the manager of the estate, the Assistant Agronom and two friendly fox terriers, that trotted along the banks, swam the canal back and forth, and hunted lizards between whiles with great enthusiasm. From the forest ride we emerged into a great clearing given up to bananas and rubber. I don't know much about bananas, so

This special planting of bananas and rubber amounted to about 2,800 acres, the rubber trees being planted 100 trees to the acre, and it took long to look it over thoroughly. We got home just at dark and promised to be ready for an early start on the morrow for the Para river.

The dwellers of the beautiful rubber city that dominates the mouth of the Amazon no doubt believe that the word Para is exclusively their own. It may come to them as a shock, however, to know that there empties into the Suriname river a genuine tropical stream that bears the name of Para. It is in many ways a miniature Amazon, with highwater marks far up on the tree trunks, masses of floating vegetation borne along by the current, with floating trees and logs that had to be dodged or dislodged; it was very like the Mightiest of Rivers. Then, too,



THREE YEAR OLD "HEVEA" WITH BANANAS.

the discussions concerning the Suriname disease, a swelling and rotting of the tissues, a sort of vegetable *elephantiasis*, or the Panama disease, a leaf blight, did not vitally interest me. I am glad to know, nevertheless, that the new Congo variety of banana, which is being introduced, seems to be immune to both of the plant sicknesses just mentioned.

The *Heveas*, which were about a year old, looked very well. The soil in which they grew is said to be about 60 per cent. clay and 40 per cent. fine sand. It is really Amazonian mud and holds the moisture wonderfully. The drains between the dykes were from five to six feet deep, so that during the rainy season the trees have at least four feet in which to grow without getting their feet wet. Apropos of this the Government Official spoke of eight year old *Heveas* on drained and undrained land. Both grew very well, but while the trees on the undrained land were 20 inches in circumference those on drained land were 30.



FOUR YEAR OLD "HEVEA" TREES.

the tree growths of palm, silk cotton, and the variety of hard woods with their small leaves and mighty branches, with the ever present and luxurious monkey vine, binding the trees so firmly together than no forest monarch could fall without pulling down many lusty neighbors. The one touch of Amazonian similitude most common, however, was the rankly growing "mocca-mocca," with its huge arrow-headed leaves pointed straight upward, filling every muddy shallow and crowding as far out into the stream as the swift water would permit. Around many curves, under leaning tree trunks, through masses of drift, by little cocoa and banana plantations, we pushed on upstream until we reached the mouth of the great canal that joins this river with the Suriname some miles above its mouth. We turned and steamed through this canal out into the muddy waters of the Suriname, past the Leper colony and across to the Accarico (Crocodile) plantation.

We received a hearty welcome from the manager, a tall, athletic, striking looking young man, who was accompanied by two huge and friendly deer hounds. This plantation, so said the Government Official, had considerable good rubber, and we started out to find it, but almost at the outset met with a temporary check. Between us and the rubber field yawned a ditch some fifteen feet deep, with a little water and considerable mud in the bottom. It was bridged by a square log about twenty feet long and six inches wide, across which our guide, his dogs and coolies paced as calmly as if it were Brooklyn bridge. The Balata Lady pluckily faced it and would have walked across, although in fear and trembling, but the Balata Man would not allow it and bade us go on and not wait for them. While we tarried for a moment, the manager produced two long poles, which were hastily stuck down into the mud by the side of the bridge, then placing a coolie on the bank at each end, who held another long bamboo pole for a balustrade, we all crossed in safety. In reality, this balustrade would not have saved one from falling in the slightest degree. It was simply the moral effect of its presence there that enabled the dizzy ones to walk safely and straightly.

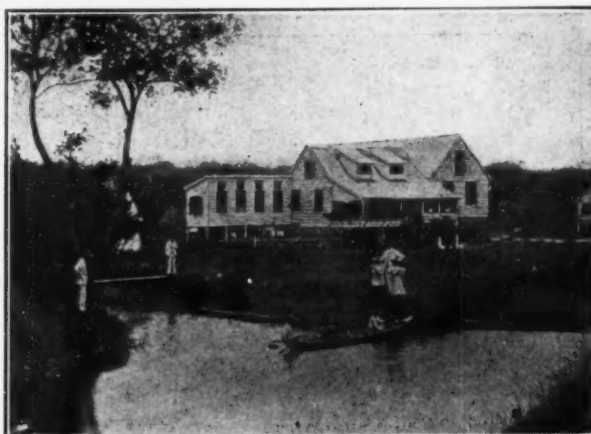
Here we saw some splendid rubber, *Hevea* 2¼ years old. There were some 1,200 acres of it, planted 100 to the acre, in distinctly clayey soil, which was, however, well drained. In addition to this, in another direction, were some 6,000 seedlings, that appeared to be six months to a year old and which looked very healthy.

Quite near here is the Waterland estate, already mentioned as having the oldest *Hevea* trees in the colony. They are only eight in number, and are used as seed producers, and while we were there were producing at the rate of 1,500 seeds a week, all of which found ready sale.

The plantation of Voorburg lies down the river from Paramaribo, and, like most of the great plantations, must be approached from the water. We journeyed to it in the *Helena*, a little steam launch named after the Balata Man's wife. This estate, an old one with some 1,500 acres under cultivation, was years ago a great sugar producer. To-day it grows coffee and cocoa, and if it fulfils its promise will soon be a notable rubber producer. The place was beautifully administered, and after examining the factory where the coffee and cocoa were prepared for market, we found a conveyance awaiting us for an examination of the plantation itself.



CANAL THROUGH "LA LIBERTE."



TYPICAL PLANTATION MANAGER'S HOUSE.

Only one who has ridden neurasthenic tropical horses or opinionated mules over plantation trails can appreciate the luxury of a state inspection in a roomy punt drawn by a slowly moving coolie who pads along the towpath mile after mile. The canals were very wide and the water clear and wholesome. In them were many leaping fish, an occasional alligator, and the four eyed surface swimming fish that is one of the curiosities of the lower Amazon. We passed through the carefully tended cocoa and coffee plantings to quite an extensive field of two year old *Heveas*, interplanted with bananas. Then we went to the older planting, which consisted of 20,000 trees. These were planted 10 x 10, and were very healthy and strong, and for a guess would run from four to six inches in diameter three feet from the ground. The soil in which they grew had been used to produce sugar, then coffee, then cocoa. The drains that lay about five feet below the surface were so dry that one could walk in most of them without dampening the shoe soles. In spite of this, the surface soil on the tops of the dykes which had been exposed to the tropical sunlight for a month without a single shower when turned up with the point of an umbrella was gratifyingly moist.

The trees were planted from stumps, some of which were two years old before being cut back, but they grew just the same. Close by was a thrifty planting of *Funtumia*, by far the most beautiful of any of the rubber producers.

From Voorburg we went down the Suriname until in full sight of the sea, then up the Commewyne by huge sugar estates with their little settlements clustered along the river banks, passing an occasional fruit barge, steered by coolies with huge sweeps, who anchored when the tide was against them and ate and slept, then when the tide turned used it instead of motive power to take them to their destination. There were other craft, to be sure, dugouts, sailing canoes, tent boats, and an occasional steam launch, but the river was fairly free of traffic and the big blue cranes and snow white egrets flapped slowly out of the way, as much at home and almost as fearless as they were when settlements were unknown. Dinner time came as we were still steaming up the river and we enjoyed a substantial repast. The meal was scarcely finished when the anchor was dropped off Katwyk. It was low tide and the tender took us to the landing steps.

The plantation named was not our objective, which was Wederzorg, an old and beautifully kept place that had been under cultivation for 50 years. The manager was absent in Europe, but his assistant willingly showed us the rubber, of which he had plantings of all ages from six months to four years. He had, for example, some 650 acres planted from one year old seedlings, the trees themselves being now four years old. They looked fairly well, but were beginning to show





LANDING AT "CROCODILE" PLANTATION.



"HEVEA" RUBBER AT "CROCODILE" PLANTATION.

slight signs of suffering from the drought. (As the rains began three days after our visit, it is doubtful if they were seriously injured). The trees were planted without any shade and many of them from slips from older trees. These did not show the vigor or good growth that was apparent in the seedlings. At the time of our visit the manager was interplanting coffee with the whole of this *Hevea* growth. Another field that was shown on this estate was an interplanting of bananas and *Hevea*. Both looked well, the young *Hevea* showing vigorous growth and the banana trees being the largest we had ever seen. The manager complained, however, that they were not bearing fruit, a very serious calamity, and one for which he could find no apparent cause.

On this estate as well as on most of the others the canals and waterways were clean and sweet. Of course, where vegetation is so abundant they become choked with sediment and vegetable

growths, but about once in two years they are drained nearly dry, closed at each end and gangs of coolies set to work shoveling the accumulation out.

It was late in the afternoon when we reached Pieterzorg. Here we had time only to examine the seed beds, where were growing some 3,000 *Hevea* seedlings that as soon as the rains began were to be set out on the plantation proper. We wanted to stop and look over the plantation, the old fashioned garden, the quaint manager's house, and substantial looking laborers' quarters, but night was falling, we were far from home and tea was ready on the launch, so we re-embarked and headed for the city.

To the American mind labor in Dutch Guiana is very abundant and very cheap. On the latter point the British planter in the far east is not by any means in agreement. His labor costs him something like fifteen cents a day, whereas the same labor



"HEVEA" 2½ YEARS OLD.  
[Interplanted with Bananas.]



"HEVEA" FIVE YEARS OLD.  
[Interplanted with Cacao, Shaded by Dadap Trees.]



STEAM LAUNCH AT PLANTATION LANDING.

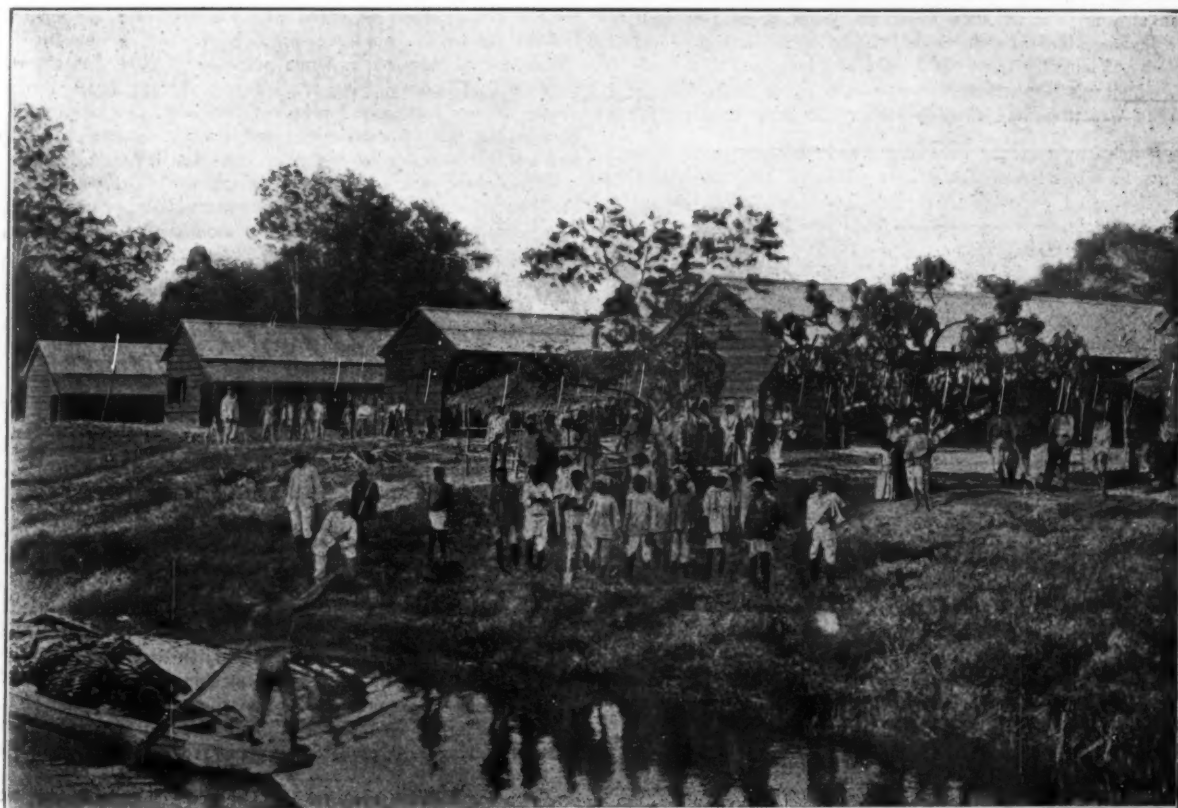
in Dutch Guiana costs 40 cents a day. This is, of course, the coolie labor, English and Javanese, brought here under the indenture system from India and Java. The English or Tamil coolies are brought in under the familiar five year indenture contract and make excellent workers, many of them remaining at the expiry of their contract as permanent settlers. They are industrious, saving, and become in a small way property owners in a short time. They live simply, contented with rice and cassava, never abandoning their native dress of turban, tunic, and loin cloth, regularly spattering the white of the tunic with magenta stain during festival seasons. Their women wear the heavy silver bracelets, anklets, and gold nose rings just as they do at home. They are wonderfully polite and their dignified *Salaam, Sahib* is very grateful as contrasted with the often stupid stare of the negro who has grown up on the soil.

The Javanese coolies are also very polite, invariably greeting the stranger with the soft intonation that makes the coolie speech so grateful to the ear, their greeting being *Taba Tuan*. They

are not, however, so desirable either as laborers or colonists as the Tamils. They are perhaps brighter and more active, but have no care for the morrow. The best of them will spend their weekly wage for one meal and then live on scraps and stolen bananas until the next pay day comes around. They are fiercely jealous, and when a neighbor, either black or white, steals one of their women, are quite likely to kill him. These summary vengeance are often accomplished before the crowd of stolid coolies, who not only will not lift a hand to interfere, but who display a lack of memory on the witness stand that would make an American Sugar Trust official green with envy. Aside from this they are very law abiding and the most willing and courteous people in the world. Their indenture system is about the same as that under which the Tamil coolies are employed.

Close by the city and jutting out into the river is the fine pier of the Balata Co., where there is 26 feet of water at low tide. Back of it are warehouses for balata and supplies and a little further upstream a miniature shipyard, where the company build their own boats for the river traffic of the interior. To this pier we came one evening, accompanied by the Balata Man and his wife and a high government official and his wife, to view a Javanese coolie festival. The giver of the feast had secured a great warehouse, reserved a space for the orchestra and dancers, and filled the rest of the space with long tables upon which were displayed viands most esteemed by the Javanese. The feast giver also collected from each guest enough money to pay for what he consumed in meat and drink, with a good margin of profit for himself. I believe the charge was about 5 guilders per plate, or two American dollars.

We arrived in the midst of the feasting. Men only were seated at the tables; the women and children squatted on the ground behind the orchestra and watched the proceedings with



COOLIE QUARTERS ON A TYPICAL DUTCH GUIANA PLANTATION.

awe and approval. The orchestra consisted of a tom-tom, a triangle, and a sort of a metallic xylophone. We were received most respectfully, chairs being brought in and a special dance being arranged for us. The dancing girl, who in the native eyes was a great beauty and a wonderful dancer, sat near us chewing betelnut and expectorating as profusely as any tobacco chewing American. Her dance consisted of a slow rhythmic walk intermingled with languid postures and graceful movements of



POLE BRIDGE ON PLANTATION.

the hands and arms. The one interesting thing about her was the accentuated expression of immobile haughtiness without which no Javanese *danseuse* can be considered beautiful. There was also an absurd little Javanese clown, dressed to imitate the Javanese idea of a Scotch highlander, whose antics provoked shrieks of laughter from the women and children.

At intervals between the dances a sash rolled in the form of a turban was presented to each visitor for drink money. After



MAIN CANAL, VOORBURG.

the clown and the ballet dancer, whom our host called the "Balata Dancer," had finished, the giver of the Fetish treated us to cigars and invited us to remain until the festival was over. As this would mean a matter of three days' stay in the balata sheds, we were compelled to decline. Instead we went out on the pier, where it was cool, and were served a most delightful after theater supper.

(TO BE CONTINUED.)

#### AUTOMOBILE TIRES FOR THE TROPICS.

**I**F any manufacturer of automobile tires will erect in his factory yard a small house, steam-heated, so that the temperature may be kept at about 90 degs. Fahr. during the day and 70 degs. through the night; if he will further see that the confined air in the building is kept moist almost to saturation; if he will provide windows so that the midday sun may raise the temperature say to 150 degs., and its light search every part of the interior, he will have a very fair imitation of the climatic condition his tires endure in the tropics.

His testing machines set up in such a room will develop startling facts. Perhaps the first to be noted will be that wherever rubber in solution has been used, it will soften and "let go" no matter how complete the vulcanization. Treads that are tough in the temperate zone are apt to get waxy and soft in the torrid; fabrics thought to be moisture proof, mildew and rot. All of which argues the need for a special tire for the tropics.

It would also seem to be worth while, for the market is a promising one. England, with her thousands of miles of fine roads in Ceylon, India, the Federated Malay States, Jamaica, Barbados, etc., not to speak of the German, French and Belgian tropical possessions, together with the large Central and South American cities, make a market for automobiles that is rapidly being exploited—one that calls for an increasingly large number of tires.

#### "NEAR" RUBBER FROM THE SOYA BEAN.

**R**EFERENCE is made elsewhere in the columns of this paper to a recently granted German patent on a process for the manufacture, from the soya bean, of a substitute to take the place of rubber.

Considering the high price that consumers are willing to pay for the raw product, compared with the cost of its production, and the constantly increasing—practically unlimited—demand for rubber for a thousand and one purposes, it must be admitted that the field is an alluring one. That a fortune awaits the inventor of any substitute for india-rubber that can be produced at anything like reasonable cost and from a material so cheap and easily obtainable as the soya bean, for instance, is taking a very conservative view of the situation. When we consider that the price of the raw rubber our manufacturers use in such vast quantities constantly dallies around two dollars per pound, it will be evident that there is a wide margin for profit above any likely cost of production and if we can subtract raw material for our rubber factories, even from a staple article of Oriental diet like the soya bean, there will be money enough in the undertaking to furnish the Mongolian population with a more toothsome and no less nutritious substitute for a food product that is relegated, in the Western world, to the rank of a source of vegetable oil and a cattle feed.

#### GERMAN BALATA BELTING FOR THE UNITED STATES.

In a recent report, the United States consul general at Dillingham, Coburg, Germany, states that during the last fiscal year, there was an increase, amounting to 32 per cent. in the shipments of balata belting from his district to the United States, all of which were made by one factory in Thuringia. These shipments, the consul remarks, will probably cease entirely in the course of the present year because a factory is being erected in the United States by this same Thurnigian firm, for the manufacture there of balata belting; the machinery for it has already been shipped to America. The consul quotes the value of the balata belting shipped to the United States from his consular district, during 1910, as \$115,747, compared with \$87,585 in 1909.

SEND for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."



## The India-Rubber Trade in Great Britain.

*By Our Regular Correspondent.*

IT was with much regret that I read in the February issue of THE INDIA RUBBER WORLD the brief notification of the decease of Mr. Hawthorne Hill. I only had the pleasure of meeting Mr. Hill once and that was about eleven or twelve years ago when he paid a visit to England. It was soon after my association with THE

### THE LATE ASSOCIATE EDITOR.

INDIA RUBBER WORLD began, and though we did not meet again, we have corresponded on many occasions and I feel the loss to be that of an intimate friend rather than of a chance acquaintance. To British readers, except those who have paid visits to the United States in the last decade and found time to call at the offices of THE INDIA RUBBER WORLD, Mr. Hill's personality will be unfamiliar, though of course this does not apply to his name. Doubtless an appreciation of his journalistic work in connection with THE INDIA RUBBER WORLD will come from the editorial pen and I shall therefore not dwell on the subject beyond these few general remarks.

A PARAGRAPH has been going round the press to the effect that artificial rubber has been made from soya bean oil by a patented process. I have no doubt that the product is merely a variation

### SOYA BEAN OIL.

of the ordinary oil substitute, as made from other vegetable oils, though in the new patent the procedure differs considerably from the time-honored chloride of sulphur process or from the heating with sulphur process. Of late years the soya bean, grown so largely in Manchuria, has become of great commercial importance, hundreds of thousands of tons being sent to Japan, and in the last few years to Europe, for the production of the oil which is largely used for edible purposes, the oil cake being used for cattle feed. The scarcity and high price of cotton seed oil made the advent of the soya bean in England doubly welcome. The beans yield 18 per cent. of oil and from the fact that it has replaced cotton oil in the soap manufacture, I have no doubt that the substitute makers know all about it, as both require glycerides of the fatty acids.

THE GORTON RUBBER COMPANY, Limited, made a public issue on February 27 to March 2 of £30,000 5 per cent. first mortgage debentures in 300 debentures of £100 each, being part of an authorized issue of £40,000. The debentures are repayable on December 31, 1927, at par, but the company reserves the right to redeem the whole or a part at any previous time at 105 per cent.

### THE GORTON RUBBER COMPANY, LIMITED.

The present capital of the limited company formed in 1899 is £62,500 and the proceeds of the new issue will be devoted to extending the company's operations and to paying off an existing mortgage of £8,000. The dividends paid have been of a progressive nature, last year's being 10 per cent., and it is now proposed to manufacture other rubber goods in addition to the kinds at present being turned out.

Mr. G. H. Cortland is the chairman and the other directors are F. Walmsley, J. P., E. L. Curbishley and George Spencer. The chairman is a Worcestershire man, while Mr. Curbishley, the man on the spot, was formerly connected with the Capon, Heaton & Company, Limited, coming to Manchester with the late Mr. Harry Heaton, Jr., when the latter took over the works some ten years ago. A change has recently been made in the works' managership. Mr. Saunders having left to commence manufacturing on his own account. It has already been mentioned in this correspondence that the Gorton Rubber Company, Limited, are now in possession of the Droylsden Rubber Works, formerly T. Worth & Company. Mr. George Spencer, to whose

initiative and energy much of the recent progress is due, was for many years connected with the tire sales' department of Charles Macintosh & Company, Limited.

THE North of England Motor Show was held at the new exhibition buildings, Rusholme, Manchester, February 17-25,

### MANCHESTER MOTOR SHOW.

being opened by the Earl of Derby, who, I may say, is by birth, residence and interests a Lancashire man. The present building is far more commodious than any of those in which shows have been held in former years and is situated in much pleasanter surroundings, though it remains to be seen whether the distance from the center of the city will not adversely affect the attendance of the business man in the day time. The show was said to be the largest yet held outside Olympia, London. Further than this, with regard to its general features I shall not go but shall limit my remarks to the tire exhibits. Of new comers to the local show I noted the exhibits of George Spencer & Company, Limited, Almagam, Limited, and Wood-Milne, Limited, whose new tire works at Leyland are approaching completion. The main feature of the new Wood-Milne tire is the tread of steel-rubber. The steel is mixed in the form of extremely fine hairs with the rubber and forms a flint-proof tread with a non-skidding surface, the use of studs not being necessitated.

The Almagam tires, which are made at Harpenden, are made of a rubber compound prepared by a special process by which the rubber is considerably strengthened. The special material used for converting weak rubber into strong is made in the laboratory and sent down into the works ready for use. A considerable and growing business is being done in these tires and a depot is shortly to be opened in Deansgate, Manchester. A feature of the Almagam tire tread is that the studs are galvanized and have an aperture in the center through which the rubber protrudes slightly. The Polack Tyre Company had an exhibit of their well-known tires which were also to be seen in the stand of Leo Swain, their North of England agent. This company is now putting up works at Shepherds Bush, London, where the complete tire will be made up and a repairing business carried on. One of the novelties at the show was a tourist car fitted with the double tire rim made by the Blackwell Rim Co., of Stourbridge. The double rim consists of the ordinary pneumatic tire and in addition an auxiliary solid tire about 1½ inches diameter fixed alongside, but which is out of touch with the ground surface so long as the pneumatic tire is in action. When a puncture occurs the auxiliary solid tire automatically comes into use and no stop whatever is necessary.

The Kempshall Tyre Co., of Europe, Limited, has a good exhibit of their well-established tires, including the anti-skid, the grooved tire and the combined steel and rubber studded tires.

One of the most important tire exhibits was that of Charles Macintosh & Co., Limited. A novelty shown was the Macintosh patent fiber tread non-skid tire, in which the shedding of steel studs is practically eliminated by the use of the patent fiber tread in which the studs are embedded. This enables the cover to be worn to its fullest extent without losing its non-skidding qualities. It is reported that this type of cover has, after prolonged tests, been adopted by several of the largest users of motor tires in this country. Other tires shown were the Macintosh grooved motor tire, the Macintosh ribbed motor tire and the Macintosh plain motor tire. The new tire protector brought out by the firm last year has, it is stated, been further improved and is being increasingly adopted by motorists who wish to reduce their expenditure on tires.

## Some Rubber Interests in Europe.

### FRANCE.

THE Compagnie Francaise de Caoutchouc is the title of a new company established in Paris, France. The corporation will be capitalized at 1,200,000 francs [= \$228,000], and will engage in the production of rubber from the latex, according to the Poulverel process.

The headquarters of the Société des Roues Pneumatiques Partington have been removed from 43 Rue de Richelieu, Paris, to 2 Rue Chateau, Neuilly on Seine. J. de Montignon has been appointed sole manager.

The establishment is announced, at Nevers, France, of the Société anonyme des Caoutchouc Comprimés. The new company, which will engage in the manufacture of rubber goods on the Epinat process, will have a capital of 70,000 francs [= \$13,300], and offices at 4 Fauborg de Lyons.

### GERMANY.

UNDER the style of Julius Roempler Akt. Ges., the rubber works of Julius Roempler, Albion Bendorf and a branch of Wilhelm Julius Teufel, all of Zeulenroda, Germany, have been amalgamated. They will form a joint stock company, with the above title and a capital of 2,000,000 marks [= \$476,000], and engage in the manufacture of rubber goods.

The Continental Caoutchouc and Gutta-Percha Co. has been organized at Hanover to conduct, on a large scale, the manufacture of raincoats, automobile and sporting clothes, using waterproof rubber fabrics.

Bruno Felgner, business manager of the Lothringer Gummiwerke, G. m. b. H., of Metz, has resigned. The merchant, Josef Sailliet, has been elected to the position.

The firm of Dr. Ernst Kuhlmann, G. m. b. H. (Berlin), has been registered, the capital being quoted at 55,000 marks [= \$13,090]. The managers are Dr. Ernst Kuhlmann, apothecary, and merchant Wilhelm Roescheisen, Berlin. The firm proposes to manufacture special bandage fabric and deal in materials and appliances for the manufacture of bandage fabrics.

The rubber goods business of J. C. Schmidt (Nuremberg, Bavaria), has been acquired with the right to continue it by merchant Fritz Lachmund, who will carry it on under the title of J. C. Schmidt, Successor.

Jenatzy Pneumatik and Auto Accessories Dealers, m. b. H., Dessauerstrasse 1, Berlin. To carry on the business as vendors of the productions of the Manufacture Générale de Caoutchouc C. Jenatzy-Leleux, Brussels, and of auto accessories of other makers. Capital stock 20,000 marks. [= \$4,760.]

The firm of L. Schetter & Co., Ltd., have commenced business at Cologne as dealers in old rubber, reclaimed rubber, gutta percha, etc., with headquarters at Gereonshaus 97/8. L. Schetter has been appointed manager of the new firm.

### A GOOD YEAR'S BUSINESS.

Mitteldeutsche Gummiwaren Fabrik Louis Peter Aktiengesellschaft, Frankfurt-on-the-Main. Reporting on the sixth business year, 1909-1910, this company says: The past year, in consequence of the excessive fluctuations in the crude rubber market, must be considered abnormal. While the increase in the cost of crude rubber, as compared with the preceding year, was so considerable, the selling prices increased but slightly. Commercial councillor Peter purchased considerable quantities of crude rubber, of a new variety, under the impression that the material was available for the company's purposes. When it was found that it could not be used, he personally assumed the entire loss, which amounted to 1,807,731 marks, so that no loss was suffered by the company. The increase in capital stock of 2,000,000 marks [= \$476,000], authorized by the last gen-

eral meeting, was confirmed. This will provide the company with a large balance and enable it to wipe out the bank debt. A dividend of 25 per cent. was authorized, on the entire stock.

### A NEW COMPANY IN HAMBURG.

Gummi Industrie Werke, m. b. h., Hamburg, has been registered in that city. The headquarters of the concern will be in Hamburg. The purpose of the organization is the recovery of used rubber, the sale of such manufactures and their by-products, trade in rubber and rubber goods of all descriptions and their perfection, the acquisition, testing and exploitation of patents and processes of all kinds as well as participation in other, similar undertakings. The capital stock is 800,000 marks, Leopold Ferdinand Friedrich Wilop, merchant of Hamburg I is the business manager.

### RUSSIA.

A JOINT stock company has been organized in St. Petersburg, Russia, with a capital of 500,000 roubles [= \$257,500], (1,000 shares at 500 roubles each) to conduct and extend the rubber boot and shoe works in that city of N. A. Stoljaton & Sons and their leather factory in the village of Kineschma.

Ernst Schubert has been elected a director of the Russian-American India Rubber Co., Treügnolnik, St. Petersburg.

### UNDER NEW MANAGEMENT.

Russian-American India-Rubber Co., "Treügnolnik," St. Petersburg. By virtue of the amended statutes of the company and in accordance with the resolution of the special general meeting of December 18 to 31, 1910, the business of the company, from and after January 1, 1911, will be attended to and controlled by a council and a board of directors. The council consists of Baron Ferdinand von Krauskopf, president; Franz Uthemann, Jr., vice-president; Hendrik van Gilse van der Pals and Carston Stender, of whom Hendrik van Gilse van der Pals and Franz Uthemann, Jr., are named as delegates. The board of directors consists of Arthur Kraack, chairman; Ernst Schubert, vice-chairman; Arthur Eilenberg, Julius Koettwitz and Otto Nauck. As authorized agents, Iwan Anissionoff, Eugen Hoffman, Gustav Moline, Arnold Mielenhausen and Hermann Schultze. In addition, power as agents was conferred on Carl Henry, Max Hurt, Julius Jaweeir, William Laudesen, Waldemar Meuschen, Karl Naumann, T. Stephens, R. Stricter and Alfred Swann.

### GREAT BRITAIN.

THE North British Rubber Co., Limited (Edinburgh, Scotland), have established a branch at Paris, France, with 250,000 francs [= \$27,500] capital, and the title Société Anonyme North British Rubber Company. The office of the North British Rubber Company A. G., in Berlin, has been removed from 9-10 North Friederich strasse to 25 Oranien strasse, Berlin, S. O., 26.

The Bavarian Rubber and Asbestos Works—the English Branch of Actiengesellschaft Metzeler & Co., of Munich—are mentioned as having secured a contract to fit 200 of the motor buses of the London General Omnibus Co. with their tires. These tires are also in use in the Bavarian postoffice service.

The Ancoats Vale Rubber Co., Limited (Ancoats, Manchester), have opened a London office at 6, Crosby square, E. C., in charge of E. A. Saunders, who has long been connected with the London rubber goods trade.

An item of interest in the balata trade is the registration in Edinburgh, December 17, 1910, of F. R. Muller & Co., Limited, with £55,000 [= \$267,657.50] capital, to take over the business of F. R. Muller & Co., of 47, Waterloo street, Glasgow, with branches in London and Liverpool, as india-rubber, gutta-percha, and balata merchants and importers.

## The Advisers of the West Indian Planters.

NOW that certain of the West Indian islands are beginning to ship rubber, and others are putting in plantations, it is interesting to briefly consider the men who are guiding the planting and whose work has been of such inestimable value to the planters. The group is officially known as the Imperial Department of Agriculture for the West Indies. It was established on the first of October, 1898, on the recommendation of the West Indian Royal Commission 1896-7. The cost of ten years to March 31, 1908, amounting to L 17,420 [= \$84,744.43] per annum, was provided from imperial funds, after which date it has been decided that the department is to continue to be maintained for a further period of five years with gradually reduced grants from the imperial government. Steps have already been taken in the several colonies concerned to contribute local funds for the purpose of continuing the efforts of the department on the same lines as hitherto. This will ensure that the department is maintained in an efficient condition for some years to come.

The work entrusted to the department is to aid in the maintenance and the supervision of the botanic and experiment stations in the West Indies, devoted to the improvement of sugar and other industries, to establish agricultural schools, the teaching of agriculture in elementary and secondary schools, and the granting of agricultural scholarships.

The head office of the department, with its scientific and clerical staffs, is located at Barbados as the most central situation. Sir Daniel Morris, K.C.M.G., D.C.L., D.Sc., F.I.C., F.C.S., for twelve years assistant director of the Royal Gardens at Kew, formerly director of the Botanical Department, Jamaica, and scientific adviser to the West Indian Royal Commission of 1896-7, was appointed Imperial Commissioner of Agriculture on September 1, 1898, and held the office with the greatest success for ten years. On his retirement in 1908 his services were retained for advising the Secretary of State in Tropical Agriculture. The present commissioner is Hon. Francis Watts, C.M.G., D.Sc., F.I.C., F.C.S. He corresponds directly upon all mat-

ters concerning the general work of the department with the Colonial Office; on matters affecting colonial establishments and expenditure he corresponds with the several governments concerned. The Imperial Commissioner is consulting officer in agricultural matters to the governments of Jamaica, British Guiana and Trinidad. He visits these colonies, and affords assistance when required in regard to the administration of the local agricultural departments, the outbreak of diseases, and the general development of planting industries. He is in administrative charge of the botanic and experiment stations, maintained for the distribution of economic plants, and the improvement of sugar, cacao, lime, fruit, cotton, rubber and other crops; also of the agricultural schools and local experi-

ment plots at Grenada, St. Vincent, St. Lucia, Barbados, Dominica, Montserrat, Antigua, St. Kitts-Nevis, and the Virgin Islands.

The publications issued by the Imperial Department of Agriculture for the West Indies number about 90,000 copies annually. *The Agricultural News* (Vols. I to VIII) is a fortnightly popular review, with a wide circulation in the tropics of the old and new worlds. *The West Indian Bulletin* (Vols. I to X) is a quarterly scientific journal dealing specially with research and experimental works in tropical countries. In addition are issued numerous pamphlets (62 in all) dealing with special subjects; also annual progress reports on sugar can experiments, the work of



SIR DANIEL MORRIS AND HON. FRANCIS WATTS.  
Of the Imperial Department of Agriculture for the West Indies.

the botanic stations, and efforts to extend agricultural education in elementary and secondary schools.

The principal officers on the department staff are:

Imperial Commissioner of Agriculture for the West Indies, The Hon. Francis Watts, C.M.G., D.Sc., F.I.C., F.C.S.  
Scientific assistant, Austin H. Kirby, B. A. (Cantab).  
Entomologist, Henry A. Ballou, M.Sc.  
Mycologist, F. W. South, B.A. (Cantab).  
Chief clerk, Alleyne Graham Howell.  
Assistant clerk, Murrell B. Connell.  
Junior clerk, W. P. Bovell.

A BIT of history of interest to rubber men occurs in a recent article by Frank J. Cannon, in *Everybody's*, entitled, "Under the Prophet in Utah." While describing the financing of the Utah Sugar Company he recounts the sale of \$400,000 worth of the company's bonds to the Mormon Church for \$325,000, and a subsequent sale to Mr. Joseph Banigan, whom he calls the "Rubber King" to the amount of \$360,000.

STATISTICS PUBLISHED IN THE *Sarawak Gazette* show a decrease in the quantity of gutta jelatong and gutta percha exported from Sarawak in 1910, compared with 1909, but as prices for both products were somewhat higher during the latter year,

the value of the exports shows no material difference. The export of Para rubber from Sarawak for 1910 amounted to about 17,200 pounds.

THE UNITED STATES CONSUL AT Valletta, Malta, in a recent report, states that on account of the rock formation of the country roads in that island and the prevalence of stone-block, macadam and asphalt streets in the city, rubber heels are very much used. He expresses the opinion that if a rubber heel can be put on the market by an American house, that would meet the price for the heel supplied by British makers (25 and 30 cents a pair, put on) it would find sale.

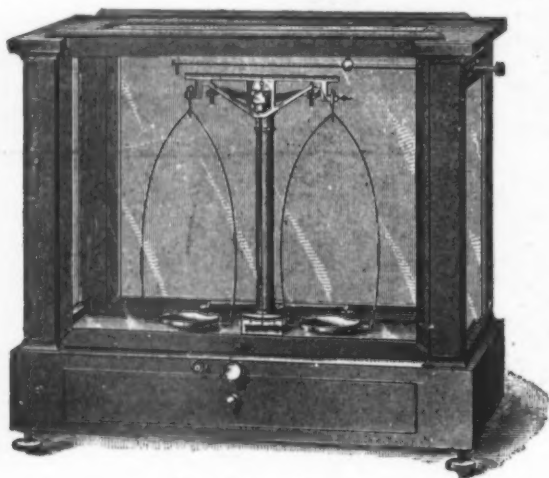


## WEIGHING THINGS IN RUBBER FACTORIES.

IT IS sometimes claimed that chemists have not made good in rubber lore, and that rubber manufacture has remained to this day, essentially a handicraft wherein mother-wit, intuition and persistent empiricism are the things that count. It is very true that formulae cannot be trusted implicitly, and that a certain indescribable sympathy with the whims of a nervously organized raw material is a much more valuable asset than a knowledge of the atomic theory. Nevertheless, in every great rubber factory today, a laboratory is as much a matter of course as a president or a boiler-room, a chemist has undoubtedly helped these companies in their competition with others who place their trust wholly in things mechanical and in mother-wit.

Every manufacturer, however, should appreciate the really great and useful discoveries made through theoretical chemistry, even when aware of its limitations, especially in the rubber trade, and at the same time insist upon the importance of clear-headed, practical appreciation of the more homely rule of thumb practice, where it is successful.

The success of chemistry has been due, more than all else, to the use of accurate weights and measures and keeping careful,



ANALYTICAL BALANCE.

written records. Too much detail will distract the attention from the main issue, but taking notes during an experiment is a real relief to the mind, and pays in the long run.

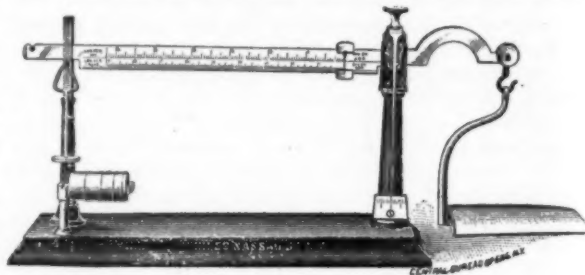
The question of weights is of the utmost importance. The use of liquid measures has been very generally abandoned in favor of weighing, as being more accurate. Balances are true, however, only within a comparatively small range; but by means of the wonderful series of weighing apparatus now on the market, it is possible to weigh anything, from a steamship to a pencil mark. Every rubber factory must necessarily have a number of balances, covering a range of weights with a certain accuracy, but these are too often used above or below their range of accuracy. If the error were constant, beyond this range, it could be allowed for.

There are many types of balances for fine weighing. One, for example, is so delicate that it indicates a difference in weight of one-five hundredth of a milligram, or less than one-fourteen-millionth of an ounce. For such balances there is furnished a unit-weight, weighing 29.1666 grams; so that in quantitative analysis, on the basis of this unit, each milligram represents one troy ounce per avoirdupois short ton. The bearings in these balances are agate planes, resting upon agate knife-edges.

There is also the multiplying scale, for use in counting small articles of the same kind. This has a capacity of four pounds, and is sensitive to one-two-hundredth of an ounce. They are

usually made to count by tens or dozens, though larger multiples could be supplied to order. In using, a dozen of the articles, laid on the long arm, will just balance a gross of the articles on the short beam.

Rubber chemists have always been accustomed to test the specific gravity of rubber samples. For this purpose there are spe-

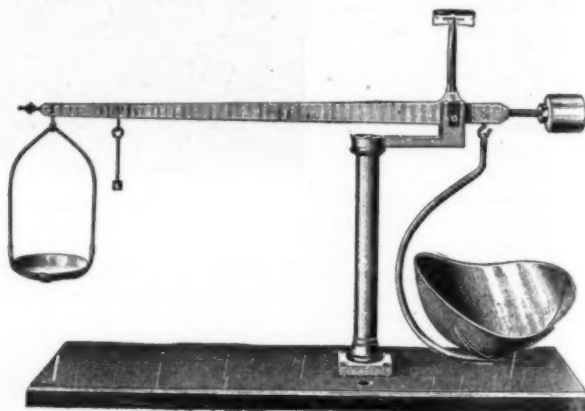


MANUFACTURERS' ESTIMATOR.

cial hydrostatic scales, for weighing in water. There is a sample balance of this type, and also a combination balance, which can be used for ordinary weighing, as well as weighing in water. This combination is an all around useful balance, having a capacity of one kilo, and sensitive to one-half centigram. Some of the finer balances, sensitive to one-twentieth milligram, have also an apparatus for taking specific gravity.

For weighing cloth, or sheeted material of uniform thickness, there are balances provided with a cutter to take out a small unit square, so that the indicator gives the weight of a square yard without the necessity of calculation.

There is a type of balance called an estimator, very convenient for rubber compounding. When a small amount of compound



COUNTING SCALE.

is weighed, the indicator will show, at the same time, exactly how much of the material will be needed to make a batch of rubber for any desired weight or number of similar articles, and this with greater accuracy than can usually be done by figuring.

When balances are occasionally moved, it is best to have them fitted with screw feet and a spirit level, so that they can be trued up for any table or counter. The hangings are of aluminum, for lightness, and the metal parts should be of platinum, brass, or otherwise made non-corrosive. It is best to have the whole enclosed in a glass case, to exclude dust, and to keep the metal parts at an even temperature. Very fine readings must be done with a magnifying glass.

Usually a set of weights goes with each balance, but these can always be found in the general market, too, ranging from a milligram (about one twenty-eight-thousandth of an ounce) to 50 pounds. The metal of these must be non-corrosive, since corrosion increases their weight and destroys their accuracy.

## Recent Patents Relating to Rubber.

## UNITED STATES OF AMERICA.

ISSUED FEBRUARY 7, 1911.

- N**O. 983,270. Resilient tire. H. M. Deeth, T. J. Deeth, W. J. Deeth and H. N. Deeth, Toronto, Ontario, Canada.
- 983,354. Core for manufacturing pneumatic tire shoes. W. S. Doll, Akron, Ohio.
- 983,387. Machine for cutting rubber rings. W. P. McGeouch, Somerville, Mass.
- 983,433. Friction clutch. J. A. Friddle, Pomeroy, Wash.
- 983,612. Vehicle wheel. W. H. Fahrney, Chicago, Ill.
- 983,671. Hose coupling. J. E. W. Boesch, Columbia, Nev.
- 983,785. Tire mold. J. W. Thropp, Trenton, N. J.
- 983,789. Rim for the road wheels of vehicles. G. Webb, Monmouth, England, assignor to The Spencer Moulton Rim Syndicate, Ltd., London, England.
- 983,812. Manufacture or purification of india-rubber and the like and the obtaining of by-products therefrom. C. Dreyfus and A. Friedl, Manchester, and W. H. Bentley, Irlam, England. Assignors to Clayton Aniline Co., Ltd., Clayton, near Manchester, England.
- 983,819. Manufacture of rubber shoes. E. C. Gavin, assignor of one-half to A. O. Bourn—both of Bristol, R. I.

ISSUED FEBRUARY 14, 1911.

- 983,871. Syringe. J. J. Brin, Chicago, Ill.
- 983,878. Mechanically adjustable resilient tire. B. Dahl, Minneapolis, Minn.
- 983,880. Vehicle wheel tire. C. G. Deming, Syracuse, N. Y.
- 984,060. Hose rack. W. D. Allen, assignor to W. D. Allen Mfg. Co.—all of Chicago, Ill.
- 984,099. Belt. M. T. Manoog, Brockton, Mass.
- 984,153. Pneumatic pressure gage. O. Olsen, Fruitvale, Cal., assignor of one-half to L. Wiener, Alameda, Cal.
- 984,186. Rim for automobile tires. G. H. Bogenhagen, Beemer, Neb.
- 984,382. Tire setter. B. E. Martin, St. Marys, W. Va.
- 984,427. Valve. N. M. Hansen, assignor to the De Vilbiss Mfg. Co.—all of Toledo, Ohio.
- 984,453. Tire inflation testing appliance. E. A. Terpening, Geneseo, Ill.
- 984,499. Antiskidding device. E. B. Stimpson, assignor to Edwin B. Stimpson Co.—all of New York.
- 984,500. Tire protective rivet. *Same.*

## Trade Mark.

- 53,696. Bourn Rubber Co., Providence, R. I. The word *Rival*. For boots and shoes.

ISSUED FEBRUARY 21, 1911.

- 984,597. Tire. T. W. Peet, assignor of one-half to A. F. Johnson—both of New Britain, Conn.
- 984,608. Footwear. E. Roberts, Leicester, England.
- 984,672. Pneumatic tire. A. Hormel, assignor to Hormel Auto-Appliance Co.—all of New York.
- 984,725. Hose dricr. B. M. Wilhite and F. I. Letsen, Gordon, Neb.
- 984,758. Machine for reducing rubber or similar material to an impalpable powder. C. E. Gardner, Gloucester, England.
- 984,765. Foldable bath mat. B. D. Knickerbocker, Chicago, Ill.
- 984,806. Rubber sole. R. E. Foster, Hyde Park, Mass.
- 984,833. Demountable rim. P. J. McCullough, St. Louis, Mo.
- 984,836. Packing. S. P. Morrison, Stuttgart, Ark., and V. Morrison, Indianapolis, Ind.
- 984,856. Flexible metallic tubing. C. T. Schoen, Media, Pa.
- 984,876. Metal protector for hose couplings. G. S. Wood, Chicago, Ill.
- 984,888. Piston packing expander. G. Christenson, Nevada, Mo., assignor to H. W. Johns-Manville Co., New York.
- 985,073. Tire tightener. F. F. Slay and S. M. Henry, Groom, Tex.

ISSUED FEBRUARY 28, 1911.

- 985,146. Valve. A. V. Clorius, Copenhagen, Denmark.
- 985,302. Tire. A. B. Thoman and P. H. Slamin, assignors to the Empire Tire Co.—all of Trenton, N. J.
- 985,397. Tire for vehicle wheels. L. A. Coleman, assignor of one-third to H. G. Whitehead—both of Norfolk, Va.
- 985,522. Lawn sprinkler. H. Gibbs, assignor to W. D. Allen Mfg. Co.—all of Chicago, Ill.
- 985,532. Tire patch. G. J. Martel, Chicago, Ill.
- 985,538. Sheath for vehicle wheels. W. K. Ornick, Detroit, Mich.
- 985,551. Hose coupling for air brakes. F. Roberts and V. J. Roberts, Auckland, New Zealand.
- 985,648. Hose repairer. T. H. Wieder, Warren, Ohio.
- 985,683. Tire removing apparatus. J. Lassale, San Jose, Cal.
- 985,741. Play ball. G. L. Harvey, Chicago, Ill., assignor of one-half to F. H. Richards, Hartford, Conn., one-sixth each to G. L. Cragg and Oscar J. Friedman, Chicago, Ill.

## Trade Mark.

- 52,950. Charles A. Daniel, Philadelphia, Pa. The word *Valvolite*. For lubricated textiles for rod and valve packing.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

## GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

\*Denotes Patents for American Inventions.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 1, 1911.]
- 22,963 (1909). Waterproofing leather by treatment with gum balata. W. K. L. Dickson, London.
- 22,984 (1909). Tapping rubber trees. W. L. Spence, Glasgow.
- \*23,110 (1909). Devulcanizing rubber. E. E. A. G. Meyer, Detroit, Michigan.
- 23,116 (1909). Infants' soothers; india-rubber articles. Shirley Bros., Southwark, and R. D. Kay, Shepherd's Bush, London.
- 23,134 (1909). Spring wheel with arched india-rubber springs. A. Tomlins and H. Lemarchand, London.
- 23,172 (1909). Pneumatic tire. M. F. de R. de Colombier, Paris, France.
- 23,306 (1909). Golf balls. G. H. Murphy, London.
- 23,308 (1909). India-rubber fabric. A. T. Collier, St. Albans, Hertfordshire.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 8, 1911.]
- 23,471 (1909). Cutting machines for india-rubber. J. A. Hill, Sheffield.
- 23,661 (1909). Pneumatic tire. Akt.-Ges. Metzeler & Co., and Dr. Haberland, Munich, Germany.
- 23,664 (1909). Rubber soles for boots, etc. A. Vorwerk, Barmen, Germany.
- 23,668 (1909). Rubber substitutes. L. C. T. Turcat and G. Nuth, Neuilly-sur-Seine, France.
- 23,682 (1909). Auxiliary rim attachment for tires. E. W. Hewett, Bishops Waltham, Hampshire.
- 23,736 (1909). Pneumatic pads for horse collars. T. Dent, Christchurch, New Zealand.
- 23,763 (1909). Rubber heel protector. A. Fearnside and C. Fearnside, Bradford.
- 23,833 (1909). Detachable pneumatic tire. H. Herrmann, Montreal, Canada.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 15, 1911.]
- \*23,887 (1909). Method of making rubber articles. F. J. Gleason, Walpole, Massachusetts.
- 23,987 (1909). Pneumatic tire. J. C. Berry, Harrow, Middlesex.
- 24,006 (1909). Waterproofing fabric with rubber or gutta-percha solution. A. A. Zimmer, London.
- 24,064 (1909). Protective band for wheel tires. G. C. Waterfield, South Farnborough, Hampshire.
- 24,099 (1909). Dress shields of rubber or like material. E. R. Davis, Bexhill-on-Sea, Sussex.
- 24,260 (1909). Cow milker. T. T. Sabroe, Copenhagen, Denmark.
- 24,262 (1909). Detachable rim for vehicle wheels. L. H. Jacobs and T. G. Jacobs, London.
- 24,272 (1909). Tread band for pneumatic tires. F. R. de Urruela, Paris, France.
- 24,330 (1909). Joint for rubber tires and belts. H. Brook, Blackpool, Lancashire.
- 24,338 (1909). Protecting sheath for pneumatic tires. A. Whiteway, and Charles Macintosh & Co., Ltd., Manchester.
- 24,341 (1909). Pneumatic tire. J. R. Trigwell, London.

- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 22, 1911.]
- 24,398 (1909). Pneumatic tire. Dunlop Pneumatic Tire Co., London, and W. H. Paull, Birmingham.
- 24,542 (1909). Hot water bottles. G. H. W. Blick, and D. Moseley & Sons, Manchester.
- 24,662 (1909). Protector for tires. J. Rees and E. D. Rees, Roath, Cardiff.
- 24,688 (1909). Pneumatic tire. E. Hawley, and A. H. Collier, London.
- 24,719 (1909). Spring wheel. J. Giraud, Paris, France.
- 24,795 (1909). Pneumatic tire. W. G. Oxley and M. H. Walsh, London.
- 24,803 (1909). Pneumatic tire. G. Baldwin, Banbury, Oxfordshire.
- 24,852 (1909). Spring wheel with inflatable rim. J. Elias, Salford, Manchester.
- 24,890 (1909). Wheel tire built up of ropes of fibrous material impregnated with rubber. G. D. Rose and A. A. Lawrence, Manchester.
- 24,956 (1909). Tire cover made of rubber covered chain. C. M. Gautier, London.
- 25,029 (1909). Molding tires. A. Olier, Clermont-Ferrand, Puy de Dome, France.

## THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 418,730 (July 26, 1910). F. H. de Lostadot. Elastic tire for all vehicles.
- 418,756 (October 7, 1909). D. Lance. Process for the manufacture of rubber tires.
- 418,934 (July 11, 1910). Vicomte de Grassin. Elastic pneumatic-mechanical tire, for wheels of automobile vehicles.
- 419,090 (August 9). J. Motyka. Compressed air tire for vehicles of all descriptions.

- 419,130 (August 9). H. A. Gamble. Protective, anti-skidding cover for pneumatic tires.
- 419,150 (August 10). P. A. Rouveyre and M. E. Rouveyre. Protected, imperforable anti-skidding pneumatic tire.
- 419,281 (August 11). F. Paulet. Process by which can be imparted to rubber and substances derived therefrom, any desired color permanently.
- 419,316 (August 12). Société Farbenfabriken, formerly Fried. Bayer & Co. Process for the production of a substance resembling rubber and products made from it.
- 419,483 (August 19). E. V. Belledin. Elastic tire.
- 419,538 (August 16). E. E. Gavois. Fixed extensible heel of rubber.
- 419,550 (August 20). T. Gare. Improvements applied in manufacture to the molding and remodeling of rubber articles.
- 419,581 (August 20). A. Roger. Pneumatic tire, with double tread, with installed felloes and wearing tread.
- 419,680 (August 25). F. Bihl. Elastic tire without air chamber.
- 419,754 (August 12). Establishment of F. Beer. Pneumatic puppet of rubber.
- 419,750 (August 5). H. Hassen. Non-splitting pneumatic tire, for bicycles and all vehicles.
- 419,764 (August 17). F. H. Garrett. Non-skidding device for road automobiles.
- 419,819 (August 29). A. W. Torkington. Improvements applied to elastic tires or the like, for wheels of road vehicles.
- 419,786 (August 27). A. R. Van der Burg. Substance replacing rubber and the process of its manufacture.
- 419,880 (August 31). N. Braibant. Wheel tire, entirely of rubber and device for its attachment.
- 419,860 (November 6, 1909). G. Reynaud. Process for the industrial manufacture of rubber.
- 419,931 (November 8). Société B. Abeil et fils. Elastic tires for vehicle wheels.
- 419,790 (August 27, 1910). The Star Rubber Co. Apparatus for the manufacture of water-bags and other hollow, seamless articles of rubber.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

#### PRESIDENT'S TROPHY AT THE RUBBER EXHIBITION.

ONE of the most attractive and interesting features of the Second International Rubber and Allied Trades Exhibition which will open in London on June 24, promises to be the various competitions for which handsome prizes in the shape of silver cups, trophies, etc., have been offered. Several of these have already been described and illustrated in the columns of THE INDIA RUBBER WORLD and we are enabled to present herewith an illustration of "The President's Trophy," offered by the president of the exhibition, Sir Henry A. Blake, G.C.M.G., for the exhibit proving of greatest interest in connection with the production, preparation or use of rubber in any form.

A better idea of the broad scope of this competition may be obtained from the following details in regard to the plan on which the award will be made by competent judges who will inspect and test all exhibits they may consider worthy and make the award according to their own judgment, no matter from what country the exhibit may come.

1. To the manufacturer showing the greatest variety of articles made from rubber, or it may be for one article only.
2. Or it may go to a manufacturer of machinery, or for some labor-saving device that would benefit manufacturers or planters.
3. Or for some simple invention of great value to all connected with the rubber industry.
4. Or to the exhibitor of some article which demonstrates how largely rubber may be used for general and commercial use in a way hitherto unknown.

It will be seen from the foregoing list that the competition is practically thrown open to every manufacturer, chemist, planter, inventor, maker of machinery, etc., irrespective of nationality, the award being made strictly for the exhibit made.

All that is necessary is that the exhibit be in the hands of the Awards Committee on or before the night of May 1, as the entries will then be closed, but entries received subsequently, the envelopes of which bear the post mark May 1, no matter where mailed, will be accepted as within the time limit. All entries must be sent full carriage prepaid, addressed Awards Committee, International Rubber and Allied Trades Exhibition, Royal Agricultural Hall, Islington, London, N., and must be marked as to which competition they are to be entered for; thus exhibits intended for the competition above referred to must be marked "The President's Trophy."

There is nothing to prevent a competitor entering as many competitions as he may wish, provided the conditions of each are complied with, nor is any special printed form necessary. Any further information desired may be obtained by addressing A. Staines Manders, organizing manager, International Rubber and Allied Trades Exhibition, 75 Chancery Lane, Holborn, London, W. C.



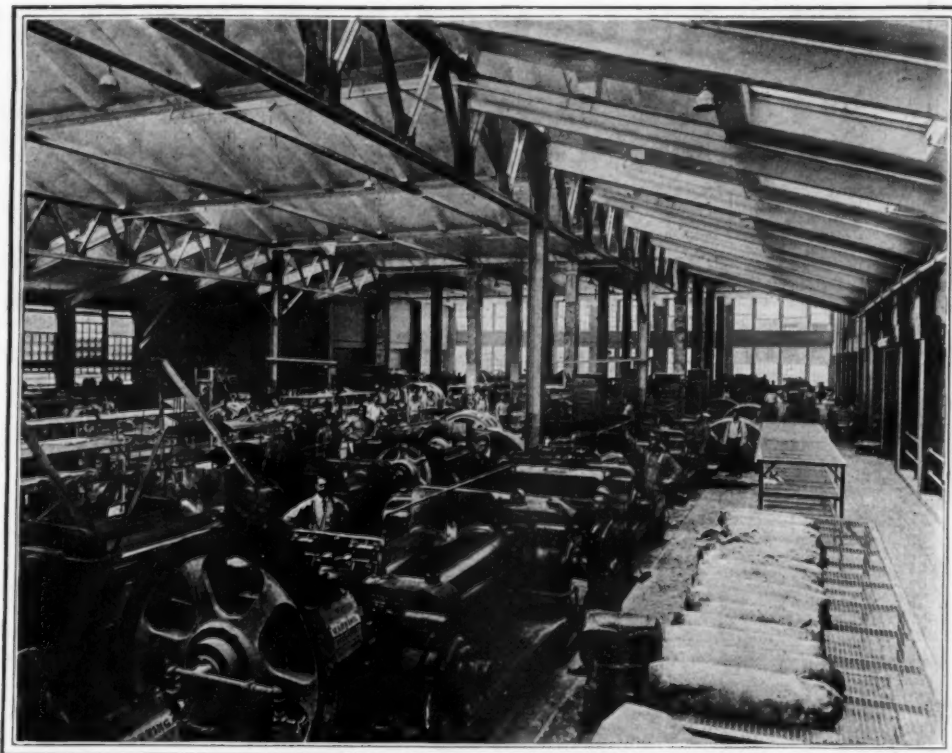
PRESIDENT'S TROPHY AT THE RUBBER EXHIBITION.

The cup, as our illustration shows, is a handsome and artistic piece of silversmith's work and bears on the front side the inscription, "International Rubber and Allied Trades Exhibition, London, June and July, 1911. Patron, His Majesty, the King; President, Sir Henry A. Blake; A. Staines Manders, Manager, and Miss D. Fulton, Secretary." On the reverse side the inscription reads: "President's Trophy. Awarded to ———" the name of the successful competitor.

THE botanical garden of the Museu Geldi, at Pará, Brazil, has increased in area more than threefold in fifteen years. The director of this institution, Dr. Jacques Huber, writing in the *Bulletin of the Pan American Union* (Washington: January, 1911) says of the trees and shrubs cultivated in the garden: "Some of them are of great industrial value, as for instance, the species of *Hevea*. Of this plant the garden possesses the richest collection in the world. The experimental garden, originally designed for experimental cultivation of plants having a commercial value, is wholly occupied by the various Amazonian rubber trees, chiefly species of *Hevea* and *Sapium*." The Pará museum, it will be remembered, was dealt with at length in a series of letters from the Amazon by the Editor of THE INDIA RUBBER WORLD last year.

A BOOK for rubber planters—Mr. Pearson's "What I Saw in the Tropics."





### THE MILL ROOM

Here the rubber is rolled or milled to give it proper consistency. This is the next step after the cleaning and drying of the crude. In other words this picture shows the manufacture of rubber. Further on, the rubber is patterned into articles of sale, and cured.

This department, representative of the equipment of the plant of the B. F. Goodrich Company, is the largest and most completely equipped Mill Room in the world.

# NEW YORK BELTING AND PACKING CO., Ltd.

MANUFACTURERS OF A COMPLETE LINE OF HIGH GRADE  
**MECHANICAL RUBBER GOODS**

Including Cobb's Piston & Valve Rod Packing, Indestructible White Sheet Packing  
Vulcan High Pressure Spiral Packing, "1846" Para Rubber Belting,  
Magic Garden Hose, Air Brake, Air Drill, Steam,  
Suction, Water Hose, etc.

Original Manufacturers of Interlocking Rubber Tiling.

**Nos. 91-93 CHAMBERS STREET, NEW YORK**

ECCE SIGNUM.



## THOROUGHLY RELIABLE.

The policy of furnishing only the finest goods that can be produced with perfect materials, latest and best machinery, and highly skilled workmen of long experience, has been, is now, and will continue to be, the policy of

**The Mechanical Rubber Company,**  
**CHICAGO, ILL.**

Branch Store, No. 1810 Blake Street, Denver, Colo., where we carry a full line of goods.

Manufacturers of all kinds of rubber goods for mechanical uses—Hose, Belting, Packing, Gaskets, Bicycle Tires, Specialties, Moulded Goods, Etc., Etc.

If you are unable to satisfy your trade with goods you are supplying,  
If you are in search of good goods at fair prices,  
If you cannot get quick deliveries,  
If you are not getting fair value for your money,  
IN ANY EVENT,

} SEND TO US FOR SAMPLES AND  
QUOTATIONS. . . . .  
WE CAN SUIT YOU EVERY WAY.

FACTORY, GRAND AVE. & ROCKWELL STS

**THE MECHANICAL RUBBER CO., 230 Randolph St., Chicago, Ill.**

## The Late John Hinchley Hart.

THE sad news that Mr. John Hinchley Hart, F. L. S., passed away at his home in Trinidad, West Indies, on February 20, recalls his many years of service as a tropical agriculturist.

Nearly ten years ago the editor of THE INDIA RUBBER WORLD received some most interesting samples of rubber extracted from *Castilloa* shoots less than a year old. The sender was Mr. Hart, who accompanied the samples with an interesting paper on the possibility of making the *Castilloa* or some other rubber producer an annual crop-giver like sugar cane. This incident is cited simply to emphasize the alert interest with which the scientist mentioned regarded rubber planting and production.

Beginning at the age of 20 in one of the great horticultural establishments in London, he soon had an offer to go to Canada, where he ranked high, both as a landscape and an horticultural expert. In 1875 the Imperial Government sent him to Jamaica, where he was in practical charge of all government gardens and lands and accomplished much. He explored the island very thoroughly and added numbers of new species to the flora of Jamaica. Later he took full charge of the government cinchona plantations, which work he followed until his promotion as superintendent of the Royal Botanical Gardens at Trinidad.

In twenty years he made them noted, as the most beautiful and complete of any tropical botanic gardens in the world.

Retiring three years ago on a maximum pension, he purchased a house close to the gardens and prepared to enjoy a well-earned rest.

His mental and physical activity, however, kept him at work. He wrote much, advised on tropical agriculture, and even made arduous trips to distant countries in the interest of his profession.

His particular specialty was ferns, on which he was an authority. He also did much research work in connection with plant diseases; work that has been of value in tropical agriculture.

A great controversialist on paper, Mr. Hart loved the give and take of wordy warfare. His strictures, however, were wholly without personal animus and those who knew him appreciated his warmth of heart and the generosity of his nature.

The editor of THE INDIA RUBBER WORLD, penning this inadequate sketch, a stone's throw from the gardens, beautified by twenty years of conscientious work by Mr. Hart, confesses to a sense of great personal loss, a loss that is shared by the whole planting world.

WILLIAM YERDON.

WILLIAM YERDON, Fort Plain, New York, inventor and manufacturer of Yerdon's improved double hose bands, extensively sold by rubber goods dealers, died at Fort Plain on March 19. Deceased, who has been ailing for several years, was sixty-three years of age. He was highly esteemed in the community and was for some time postmaster at Fort Plain. He leaves a widow, a son and a daughter, and the business of manufacturing Yerdon's improved double hose bands and other specialties, will be continued by the widow as executrix of the estate, with the as-

sistance of Mr. J. E. Barker, who has been active in its management for the past four years. He is thoroughly familiar with the technical features of the device as well as with its manufacture and announces his intention to maintain the standard of quality for which it is famous.

### OBITUARY NOTES.

MOSES DWIGHT WELLS, who died recently in Chicago, was one of the pioneer merchants in that city, and founder of the corporation, M. D. Wells Co. Mr. Wells was a native of Massachusetts, and went to Chicago in 1852, at once becoming interested in the shoe jobbing trade with a brother already established there. The business in which Mr. Wells was interested was conducted at various times under different names, and when the firm took on the manufacture of shoes it was the first enterprise of the kind in the West. The firm were large distributors of rubber footwear. Mr. Wells retired from active business when the firm became a corporation, in 1902. According to his will, filed for probate in Chicago, the estate is estimated to be worth \$1,200,000.

THE death is reported of John Hall, for many years a member of the firm of Hall & Hamlyn, Limited, rubber and leather merchants, Hull, England. The business, in which he took an active interest, was established twenty-nine years ago, but for several years, owing to ill health, deceased had practically retired from its management. He was widely esteemed, in business circles and as a public-spirited citizen, and at the time of his decease was but 55 years of age.

THE recent decease is reported, at Leicester, England, of Robert Edlin, who is credited with having built, in 1888, the first velocipede to be fitted with a pneumatic tire, of the type now so universally employed. When a young man, he made a hobby of velocipede construction and acquired a reputation for his success in this field.

When, in 1887, J. B. Dunlop devised the first pneumatic tire, Mr. Edlin was suggested as the man who could furnish a machine to fit it and the result was the first pneumatic-tired bicycle.

Through a United States Consul in Germany, the Department of Commerce and Labor, at Washington, D. C., has received a request for quotations from American manufacturers of rubber cloth for printing rolls, prices to be quoted per square meter on cloth about 80 centimeters wide and 2 or 2½ millime thick. The weight per square meter would have to be given and shipments made in rolls packed in cases. The consul's communication was accompanied by a sample of the material, which can be obtained from the Bureau of Manufactures.

To the general reader, interested in topics of a geographical character, *The Rubber Country of the Amazon*, by Henry C. Pearson, affords a fund of interesting and instructive reading. To the rubber man the information it furnishes is indispensable.



THE LATE JOHN HINCHEY HART, F.L.S.



## NEW TRADE PUBLICATIONS.

**THE** GOODYEAR TIRE AND RUBBER CO. (Akron, Ohio), publishes an attractive booklet dealing exclusively with their motorcycle tires. After brief reference to the tire troubles with which the average motorcyclist suffers, the booklet goes on to show, in describing the methods of manufacture the company employs, how they may be avoided by the use of Goodyear tires. Each of the five styles of motorcycle tires the company manufactures, is separately described and illustrated and the reasons given why each is specially adapted for the riding conditions it was designed to meet. Pictorially and typographically, the booklet is a credit to its publishers, and it supplies information that motorcyclists—especially those who have experienced tire troubles—will appreciate.

**KAUFMAN RUBBER CO., LIMITED** (Berlin, Ontario), have recently sent out their third annual catalogue of "Life Buoy" brand rubber footwear, to cover the years 1911, 1912. It is a well-printed and profusely illustrated publication of 64 pages, the price list and trade discounts being printed on separate cards.

**PARKER, STEARNS & CO.** (Brooklyn, New York), publish a catalogue of rubber sundries for 1911, a notably handsome book of 90 pages, 9 x 6 inches, attractively bound in blue cloth, on which the company's trade mark "Alpha" boldly stamped in white, is conspicuous. Printed in two colors, in English and Spanish and fully illustrated, it gives wholesale prices of the rubber sundries, mainly surgical and medical goods, for which the company has a world wide reputation, accompanied where necessary with brief descriptions and showing, at the same time, the manner of packing the goods and the distinctive marks under which they are put up. The excellence and profusion of these illustrations materially enhances the value and convenience of this handsome catalogue, to buyers of goods of this nature.

**THE ROCHESTER RUBBER CO.** (Rochester, New York). Four grades of rubber footwear for which they are selling agents, the Malden, Melrose, Woonsocket and Empire brands, are illustrated and described in a neatly printed catalogue of sixty-two pages (9 x 5 inches) with artistic cover, sent out by the above company. No price list accompanies the descriptions of the goods, the publishers explaining, in a prefatory notice, that a net price list will be forwarded, following any change in the footwear market.

**FRANCIS SHAW & CO., LTD.** (Bradford, Manchester, England), rubber mill engineers, have issued, for 1911, their catalogue No. 21 of modern rubber plantation machinery. It is a complete compilation of the most modern machinery and appliances for treating the raw product on the plantations, for the use of planters and others interested in the cultivation of rubber, covering 40 pages 11 x 9 inches, with numerous finely executed, photogravure illustrations, the accompanying text being in four languages, English, French, German and Spanish, and prices are quoted in sterling for each machine, together with the spare parts the purchaser is advised to supply. Many of the illustrations are made from machines built by the company for use on plantations.

**THE GUTTA PERCHA AND RUBBER MANUFACTURING CO.** (Toronto, Ontario). A new catalogue of the footwear manufactured by the above company, under their "Maltese Cross" trade mark, for the season 1911-1912, has recently been published. It is quite a voluminous booklet—75 pages, 6 x 4 inches—and fully illustrates the comprehensive line of rubber boots and shoes the company manufactures. No prices are quoted in the catalogue, but it is accompanied by a separate 24-page booklet of the same size giving net prices to the retail trade, subject to cash discounts, which are also quoted.

**SYRACUSE RUBBER CO.** (Syracuse, New York), publish a comprehensive catalogue of automobile, motorboat and aeroplane supplies. As dealers in strictly high grade goods, their handsomely printed publication of 145 pages, 10¼ x 7¾ inches,

presents a complete assortment in each of the above-mentioned classes, showing illustrations wherever they are likely to prove an aid to the satisfactory description of the goods referred to and quoting prices. With its well arranged index it should form a valuable guide for buyers of this class of goods.

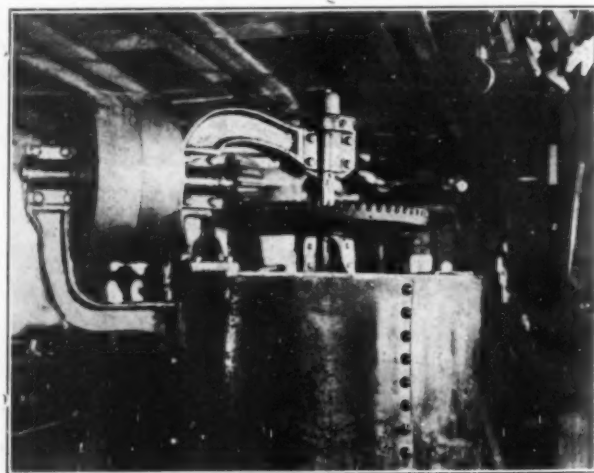
**CENTRAL ELECTRIC COMPANY,** Chicago, have sent out, under date March, 1911, a price list and discount sheet, applying to their 1909 catalogue, No. 26. It covers 84 closely printed pages, 8 x 5½ inches and supersedes all previous quotations.

**THE BRISTOL CO.** (Waterbury, Connecticut), are sending out, in the form of a 44 page booklet, distinguished as Bulletin No. 131, a catalogue of the Bristol's Recording Voltmeters for switch-board and portable service. Profusely illustrated and accompanied by 12, 8 and 6-inch charts, besides describing their voltmeters, it also gives a partial list of about 1,000 users of these devices, which includes the names of many of the most prominent electric lighting and power companies in the United States and elsewhere.

## IMPROVED MIXING CHURN CONSTRUCTION.

**THE** mixing of rubber compounds, owing to the heavy strain of the stiff mass on the mixer, requires that this part of the apparatus be very strongly constructed. The G. V. Scott Co., Brockton, Massachusetts, have made some important improvements in this class of machines with this end in view.

As the accompanying illustration shows, they build a churn that is entirely self contained, the working parts of which, with their

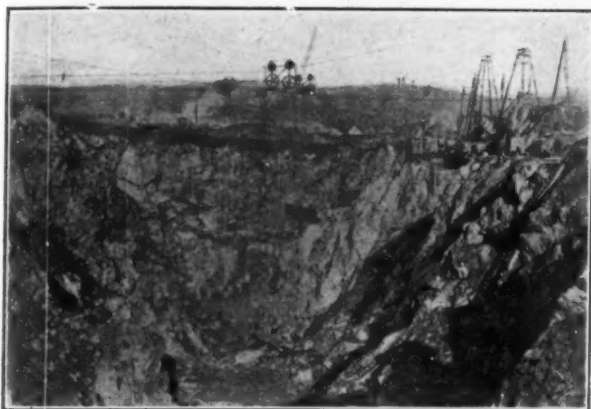


IMPROVED COMPOUND MIXING CHURN.

bearings, are all above the tank. The strong, overhanging arm, supports the whole weight of driving shaft, gearing and revolving arms, a socket at the bottom of the tank serving to steady the shaft against lateral movement, without, however, having to sustain any of the weight. Two bearings support the shaft, one on the end of the arm, immediately above the large bevel gear, and one carried by the top of the tank immediately beneath the gear, which is large toothed and very strongly cast. The extreme upper end of the shaft is fitted with a screw adjustment, by means of which any wear on the loose rings that carry the weight can be easily taken up. The smaller bevelled gear is keyed to the end of the driving shaft, which is also supported by two bearings and between these are the tight and loose pulleys, the former keyed to the shaft. All arms and gears are secured by keys, in place of using set screws. These churns are all made of one diameter (36 inches), but the height can be varied as desired when ordering.

## Asbestos as a Commercial Product—I

**A**SBESTOS,\*from the Greek word meaning "inconsumable," is the name applied to two fibrous minerals, *amphibole* or hornblende asbestos and *chrysotile* or serpentine asbestos. These minerals are much alike in external appearance, chemical composition and ability to resist heat. There are many other fibrous like minerals called asbestos but none of commercial importance.



KING BROS.' ASBESTOS MINE, THETFORD, CANADA.

Asbestos, using the term generally, is quite widely distributed over the earth's surface. It was first discovered in Susa, Italy, where it has been mined for several hundred years. It is also found in parts of Russia, Siberia, New South Wales, Africa, Mongolia, Queensland and England. In our own country it is confined to parts of Virginia, South Carolina, Arizona, Vermont and Canada. The greater part of the world's supply comes from the last named country, and is the form of asbestos known as chrysotile. Chrysotile or serpentine asbestos is found in the non-fibrous mother rock in the form of small veins, "laces" or "stringers." In its original position it lies perpendicular to the bordering planes. Its fiber is uniform in length, very flexible and elastic, and fine. The length, the controlling element in grading the various qualities, rarely exceeds two inches and is more often one inch or less.

The high temperature of 2,000 degrees and 3,000 degrees Fahrenheit it easily withstands, and often a temperature of 5,000 degrees Fahrenheit seems to work no visible ill effect. Its hardness is equal or somewhat superior to calcspar. In specific gravity it resembles porcelain and glass, and it resists acids exceedingly well. In color the Canadian chrysotile is yellow, greenish-yellow and bright green to very dark green, and some blue has been found. When the fiber has been drawn out, it assumes a silky white appearance. Typical Canadian asbestos has a chemical constitution about as follows: silica, 40; magnesia, 41.3; ferrous oxide, 2.5; alumina, 2.2, and water, 14.

The difference between harsh and soft asbestos is largely a question of the amount of water present—the more water, the softer the material. Thus, it is said that a very fine quality of fiber disclosed, upon analysis, the presence of 14.38 per cent. of water, and a harsh specimen was found to contain only 11.70 per cent. Further it was observed that asbestos became brittle with the expulsion of water by heat.

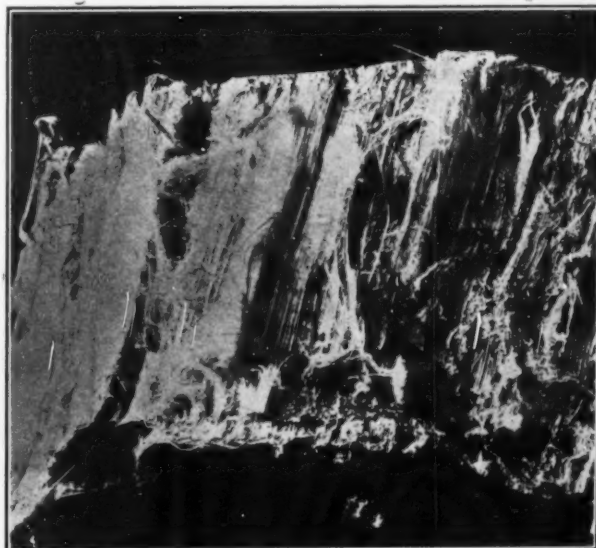
The principal localities whence Canada derives her great output of asbestos are in the province of Quebec, more particularly in the eastern townships. The most important district is in the vicinity of Thetford and Black Lake. In this region are masses

of serpentine rock intermingled with strata of slate, schist and diorite. In the immediate neighborhood of Black Lake, the serpentine forms a mountainous ridge rising to a height of 900 feet above the railway. On this ridge are some of the most productive of the asbestos mines. It is in the serpentine rock of this general district that the chrysotile veins are located. The thickness of the vein is, ordinarily, the length of the fiber, since the latter occurs perpendicular to the faces of the enclosing rock. The asbestos is usually detached without trouble. In some cases, however, it clings stubbornly and the separation becomes a matter of difficulty.

Most asbestos is mined on or near the surface. The first operation consists in breaking up the rock mass in which the asbestos veins occur. It has, as a rule, been found best to proceed as one would in a quarry. Underground methods are regarded as inadvisable. In mining asbestos by the quarry method, one must consider future possibilities, otherwise one will be likely to dump the refuse near to the quarry, with the result of sooner or later interfering with the prosecution of work. Provision must be made for the transportation of the raw material at once. Taught by previous experience, the operator constructs a long tramway and dumps the refuse on a spot which he does not expect to exploit.

If the site for the mine be covered with surface soil, this is removed. In the Blake Lake and Thetford district, the overlying soil is sometimes 15 to 20 feet thick. If the open quarry method is to be employed, the soil is removed in the summer time. The Bell Asbestos Company, of Thetford, have introduced the steam shovel method for such work.

Mining operations are carried on by a terrace-like arrangement. The rock is blasted out with dynamite, containing about



CANADIAN CHRYSOTILE ASBESTOS.

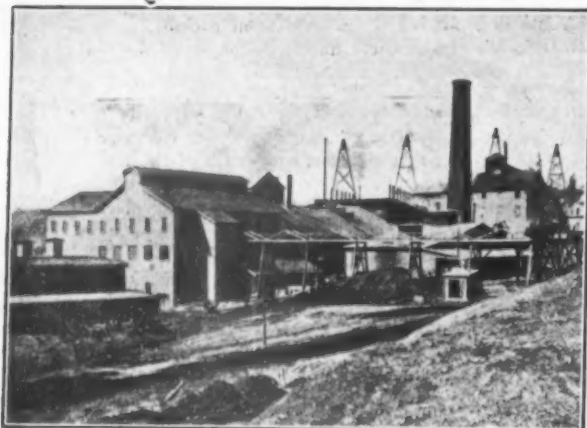
40 per cent. of nitroglycerin. Holes are drilled and dynamite cartridges 8 inches long and 1¼ inches in diameter are employed. The blast holes range in the neighborhood of 8 to 10 feet in depth. The expense for explosives is said to be about three cents per ton where the rock is solid and massive. A pound of dynamite will dislodge about 4¼ to 5 tons of rock.

The spoil will naturally consist of asbestos bearing rock and

that which is barren. Its removal to the tram cars constitutes quite a problem. Sometimes derricks are used. But where a considerable extent of surface has to be covered, the use of a cableway has been found advantageous. This cableway consists

this is first sent to the *dryer*, and afterwards, for treatment to the mill.

Hand cobbing is performed by men and girls. The men attend to the heavier pieces of material which when broken up



THE ASBESTOS AND ASBESTIC CO.'S PLANT, DANVILLE, CANADA.

of a steel cable, perhaps 400 feet long, which is suitably supported at either end, and of a carriage or basket which runs on it. In addition to the steel rope which constitutes the suspension bridge for the carriage, there are, of course, ropes for adjusting the hoists, stoppages, etc. Working of these cables is controlled by an operator at one end of the line. Of course, if the cableway is inclined at a sharp angle the cable paraphernalia is much more simple. The inclination of the cableway being sufficient to prevent the carriage moving until the load has been hoisted, the cableway is often run by an engine, the steel ropes passing over



KOREWO MINES, ASIATIC URALS.

are sent on for the girls to sort into grades. The responsible part of the "cobbing" as it is called, falls to them. They are seated before long tables, having a square of steel in front of each girl, upon which they pound and separate the rock from the fiber. For this purpose are used small steel hammers not weighing over  $\frac{1}{2}$  a pound, as great care must be taken in not breaking the long asbestos fibers. After the rock and fiber are separated, it is all carefully sifted and the fibers are thrown into compartments marked Grade I and II. No. 1 Grade consists of fibers  $\frac{3}{4}$  inch long or more; No. II Grade, of fiber



EL CHEER, A VERY RICH ASBESTOS PROPERTY IN MONGOLIA.

large drums, and it is so completely under control that it is often used to shift heavy pieces of rock at the bottom of the pit or to handle heavy machinery and the like. The carload of debris is dumped on to the tram car which takes it to its destination. If the cars contain nothing but barren rock, they are sent to the dump. Certain material from the pit, however, contains fibers of asbestos—fibers having lengths varying from 5-16 of an inch up. This is sent to the *cobbing sheds*, where it is dressed by hand. Material containing the shorter fiber, scrapings and the like goes to the *mill* where mechanical treatment is applied. Certain of the material will contain more or less moisture, and



PRIMITIVE MINING METHODS STILL IN VOGUE IN THE ASIATIC URALS.

ranging from  $\frac{5}{16}$  to  $\frac{3}{4}$  inch in length. The screenings and refuse from the hand-cobbing process are treated mechanically at the mill. The mill deals with all difficult material—that where the fiber is short, etc.

[TO BE CONTINUED.]

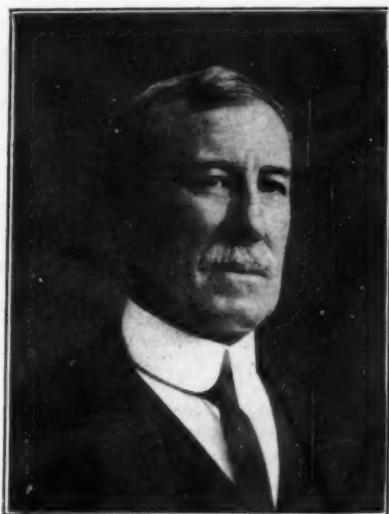
THE EXPORTS OF RUBBER WASTES to the United States of America from the consular district of Dresden, Saxony, show a constant increase. In 1907 they amounted in value to \$4,449, in 1908 to \$6,778 and in 1909 they had risen to \$6,803.



## The Forsyth Dental Infirmary for Children.

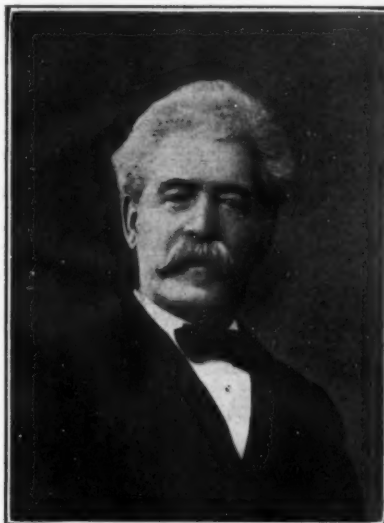
THE increasing number of practising dentists and the influential position accorded the dental profession in modern medical science, affords the best evidence as to the importance attached now-a-days, to the care of the teeth. It is

For the most part, however, these dental hospitals and clinics, devote their attention mainly to adult patients, practically overlooking the fact that it is during the period of their development



THOMAS ALEXANDER FORSYTH.  
[President Boston Belting Co.]

recognized that on their proper protection from malformation and decay, the comfort and health of the human being is to no small extent dependent and in nearly all the large cities, there are, in addition to the private practitioners, public institutions for the promotion of this important branch of hygiene.



JOHN HAMILTON FORSYTH.  
[Superintendent Boston Belting Co.]

in the growing child, that the most important work is to be accomplished for the protection and development of the teeth.

Knowledge of these facts, inspired John Hamilton and Thomas Alexander Forsyth, widely known through their connection with the Boston Belting Co., to establish, as a fitting memorial to



THE FORSYTH DENTAL INFIRMARY FOR CHILDREN.

their deceased brothers, James Bennett and George Henry Forsyth, the Forsyth Dental Infirmary, at Boston, the former of whom had the foundation of such an institution in view, when unexpectedly overtaken by death before his plans had matured.

The infirmary, which judging from the accompanying illustration showing a front view of the edifice, will be a handsome and imposing addition to Boston's public buildings, and in every way in keeping with the best of them, is to be erected on a tract of land, with an area of 51,000 sq. ft., on the Fenway, opening on Hemenway street, one of the choicest and most accessible sections of the city. The land nearest Massachusetts avenue, will be converted into an enclosed park, the portion of the property not occupied by the building will be handsomely laid out, the two wings partially enclosing a sunken garden. From the residence in Brookline, of the Forsyth family, the infirmary will be plainly visible.

The total cost of the building and equipment, with the land, will be not far short of \$2,000,000; the land has already been purchased and conveyed in trust to the institution which has been incorporated, by special act of legislature. In addition, an endowment of \$1,000,000 will be placed in the hands of the Old Colony Trust Company, to be invested for the benefit of the infirmary. Of the income, 90 per cent. will be turned over to the trustees for current expenses, the remaining 10 per cent. will be used, half as a research fund, the remainder as a rebuilding fund. One of the trustees will represent the Old Colony Trust Company in the board and he will be the treasurer of the infirmary.

Every provision has been made by the founders for the attainment of the maximum degree of efficiency and utility by the institution. There will be 104 chairs and the equipment throughout will be of the best and most modern character. There will be a permanent staff of dentists in constant attendance, as well as a consulting staff, made up of dental practitioners who volunteer their services. Post graduate and regular students' courses will also be provided for.

All deserving children, under sixteen years of age, will be entitled, free of charge, to advice and treatment at the infirmary. Patients above the age limit will also be attended, on payment of a small fee, and where it may be necessary, artificial work will be undertaken for the younger patients, for which ample provision will be made in the laboratories of the infirmary. A museum, as a depository for material of every description, for use in teaching dental hygiene and a lecture room, in which addresses on the subject will be delivered by experts, will be free to the public. A comprehensive dental library is also part of the plan.

The family, to the judicious munificence of whose members Boston is indebted for this unique institution, is of ancient ancestry, tracing its lineage to Cadet De Forsath, who in 1236 was in the train of Eleanor, daughter of the Comte de Provence when she journeyed to England to become the wife of Henry III., King of that country, and to his son William de Forsath, who is recorded as having taken the oath of fealty to King Edward I. of England, in 1296. From these ancestors the descent is traced of William Forsyth, son of Captain John Forsyth, of the British army, and father of the donors of the infirmary. He was born in Ayrshire, Scotland, in 1807, came to Boston in 1828, subsequently becoming a resident of Brookline. Of five sons and three daughters born to him, only the two sons above mentioned, whose portraits are presented herewith, survive. Both are actively engaged in business with the Boston Belting Co.

AN IMPROVEMENT IN ANTI-SLIP plugs for rubber soles is the subject of a patent issued to R. E. Foster, Hyde Park, Mass., under number 984,806. His solid plug, previously used, made the sole less resilient; this he remedies by inserting canvas treads in part on the surface, in part somewhat below it; the latter coming into wear when the former have been worn away.

## THE EDITOR'S BOOK TABLE.

BRITISH GUIANA, BALATA AND RUBBER INDUSTRIES. PREPARED by the secretary of the Permanent Exhibitions Committee of British Guiana and issued by that body. [Paper. 32 mo. Pp. 16.]

A NEATLY printed booklet, giving a brief historical account of the industry, with statistics as to its growth, information as to the area devoted to rubber production, rubber estates, methods of cultivation, the labor problem and particulars as to yield, etc. Similar booklets relate to the sugar and rice industries, each of which furnishes interesting data relative to the development of the colony and its material prosperity.

KOLONIAL HANDELS ADRESSBUCH, 1911 (15 JAHRGANG) MIT KARTEN DER KOLONIEN IN BUNTDRUCK. Berlin. Kolonial-wirtschaftlichen Komitee, 1911. [Paper, large 8vo. Pp. 450. Price, 2.50 marks.]

A COMPLETE compendium of information in regard to German colonies in all parts of the world, with their governing officials, railroads, tariffs, freight rates, time tables, etc.; in fact, everything that a merchant having business relations with these countries, requires to know. It also contains a list of mercantile houses, planters and others, having trade relations with the colonies, whose headquarters are in Germany. In scope and bulk the work has been materially increased, the statistical tables of trade being notably complete.

CAOUTCHOUC ET GUTTA-PERCHA. BY E. TASSILLY, PARIS. . . . O. Doin et Fils. [Cloth. 18mo. Pp. 396. Price, 5 francs.]

PUBLISHED as part of the Encyclopedie Scientifique, issued under the direction of Dr. Toulouse, this little work is intended to give a full account of the present condition of the india rubber and gutta-percha industries. Starting with a brief historical introduction relating to the earliest use of these substances by the natives in Asia and South America, it follows the various processes, from the collection of the latex, to the ultimate manufacturing processes, referring cursorily to the chemical properties of both products, methods of analysis, etc., and while admittedly somewhat condensed, it treats the various branches of the subject concisely and comprehensively.

LE CAOUTCHOUC. PAR L. TILLIER. PREFACE DU PRINCE Pierre d'Arenberg, President of the Federation of District Automobile Clubs of France. [Paper. 8mo. Pp. 34. Price, 1 franc.]

IN his preface, Prince d'Arenberg refers to the importance to which rubber has attained, in connection with the automobile, in promoting and encouraging inter-communication. The author deals with the subject of rubber *ab ovo*, referring to the first mention of the substance by Columbus, on his return from the new world and following it up to the latest developments. Successive chapters treat of the origin and composition of caoutchouc, caoutchouc plants, their utilization, geographical distribution and cultivation, trade in rubber, rubber statistics, and industrial rubber, a number of wood cuts serving to elucidate the text.

## AN ARTISTIC AND PATRIOTIC REMEMBRANCE.

FROM Calender's Cable and Construction Co., Limited (London), we have received a copy of a finely executed photogravure of the recently launched British dreadnought *Thunderer*, of which great things are expected in the way of speed and efficiency, showing her as she will appear in commission at sea.

While there is nothing about the picture to suggest an advertisement, it cannot but serve to keep in mind, the company whose enterprise, probably not altogether uninfluenced by patriotic pride, prompted its distribution, which may also have been inspired, in part, by the circumstance that the main electrical distribution, so important a factor in the operation of the modern battleship, has been effected entirely by means of Calender's cable and special boxes.

In any event, the picture is an attractive work of art and a reminder of the jealous care with which Great Britain seeks to maintain her naval supremacy as an essential factor in her commercial prosperity.

## NEW INSULATED WIRE SPECIFICATIONS.

THE revised electrical rules of the Electrical Department of the city of New York were promulgated during March and take effect April 1. These new rules are much more drastic in regard to the tests applied to insulated wire than were the old ones.

Rule No. 41 provides that all tests shall apply on all wire at the time of manufacture as well as up to and including the time of installation. This rule is intended to provide against deterioration between the time of manufacture and installation. The rule also provides that the insulation must consist of rubber or other approved compounds homogeneous in character, adhering to the conductor. The thickness of the insulation for each size wire is definitely specified in the rule.

Tests for the hardness of the insulation provide that, after the braid has been removed, the insulation must be sufficiently elastic to permit all wires smaller than No. 7, to be wrapped five times around a cylinder of specified size (Nos. 8, 9 and 10 double the diameter of the wire measured over the insulation. No. 11 and smaller equal to the diameter of the wire) without injuring the insulation.

The tests for softness of insulation provides that the insulation must present sufficient resistance to crushing or tension to withstand the following to tests:

TEST A.—A sample of wire of sufficient length for test, about 20 inches, shall have the braid and insulation removed for about two inches at each end, leaving the braid and insulation on balance of sample. One end of the bare copper shall be fastened to a clamp on a shaft, and a ten-pound weight attached to the other bare copper end of the wire. The shaft shall then be revolved ten times in ten seconds, wrapping the sample in a close, even wind around the shaft. With the tension left on the sample, it shall then be immersed in water at a temperature of 60 degrees Fahrenheit for 24 hours, immediately after which time it shall, while still immersed, be subjected to 1,500 volts alternating current for one minute and shall show an insulation resistance equal to at least half that required by the test formerly provided at 100 volts.

TEST B.—Sample to be tested shall have braid carefully removed for at least one inch from one end. The wire itself shall be connected to one terminal of an electric circuit, of which a testing tool shall be the other terminal. This circuit shall have a potential of at least 100 volts alternating, or 140 volts direct current and a resistance of at least 1,000 ohms.

The portion of the wire with braid removed shall be placed on a flat surface and subjected to a pressure, vertically applied by means of the edged tool, of five pounds for fifteen minutes. The tool edge shall be sharp and the sides of the edge shall form an angle of 90 degrees with each other. During this period the tool edge, when placed transversely to the insulation shall not sink through sufficiently to touch the copper wire and complete the electric circuit.

All of the above insulations must be protected by a substantial braided covering, properly saturated with a preservative compound. This covering must be sufficiently strong to withstand all the abrasions likely to be met with in practice, and must substantially conform to approved samples by the manufacturer.

Manufacturers of rubber covered wires are particularly pleased with these new rules and predict that the effect of them will be to keep off the market inferior materials in which the insulation contains little rubber.

The City Electrician of Chicago has notified the builders and contractors of that city after April 1. No electrical work in which rubber covered wire is used will be approved in that city unless the insulation conforms to the revised specifications of the Electrical Department of New York City, as quoted above.

At the biennial meeting of the National Board of Fire Underwriters, which was held in New York March 22 and 23, changes in the specifications and rules governing rubber-covered wire were adopted. The board practically adopted the report of the electrical committee and all of the changes made were in the direction of making more drastic the regulations and more severe the tests required. For the most part the new rules of the underwriters will be identical with those, referred to above, which have been adopted by the New York Department. The tests and

requirements as to material and construction are practically the same. The tables for the thickness of insulation on the various sizes of wire are the same.

The rule for testing the insulation reads:

Any one foot sample of completed covering must show a dielectric strength sufficient to resist throughout five minutes the application of an electro motive force proportionate to the thickness of insulation (according to a definite table specified in the rule). \* \* \* The application of the electro motive force shall first be made at 3,000 volts (alternating current) for five minutes, then the voltage increased by steps of not over 3,000 volts, each held for five minutes, until the rupture of the insulation occurs. The test for dielectric strength shall be made on a sample wire which has been immersed in water for seventy-two hours. One foot of the wire under test is to be immersed in a conducting liquid held in a metal trough, one of the transformer terminals being connected to the copper of the wire and the other to the metal of the trough.

The rules provide that every length of completed wire or cable must be tested after not less than twelve hours immersion, and while still immersed, by the application for one minute of an alternating current of a voltage graded according to the size of the wire (as provided in the tables). Any length of completed wire may be tested after 30 days' immersion, and must show not less than 50 per cent. of the insulation resistance required after twelve hours' immersion. The results of the insulation tests at different temperatures are to be reduced to a basis of 60 degrees F. by using standard multipliers which are provided in the rules.

The tests for softness and for elasticity are practically the same as those referred to above as having been adopted by the New York Department.

A new rule has been added to the series of tests, which reads as follows:

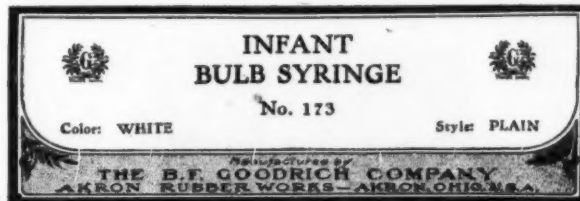
41. J.—Five chemical tests shall be made of the rubber compound as follows: Acetone extract, alcoholic potash extract, chloroform extract ash and total sulphur. The sum total of the results of these five tests shall not exceed 80 per cent. by weight of the total compound—tests to be made according to Underwriters' Laboratories Specifications.

The ash test shall be supplemented by tests to determine the quality of substances, other than vulcanized rubber, which are combustible, but not soluble in acetone, alcoholic potash or chloroform, and any such substances shall be counted as ash.

These new rules will probably be promulgated in April, but will not go into effect for five or six months in order to give manufacturers an opportunity to dispose of their present stocks.

## LABELS FOR DRUGGISTS' SUNDRIES.

THE drug and surgical department of The B. F. Goodrich Co. (Akron, Ohio) has adopted a uniform style of label to be used in future. This is a design effect with stippled border at the bottom to show the Goodrich name and address, with a heavy



THE GOODRICH UNIFORM DRUGGISTS' SUNDRIES LABEL.

line border at top and sides. Ample space is provided for featuring the particular goods involved. The general color scheme will be lettering in black on a white background, although some exceptions will probably be made. The size and shape of label will necessarily vary to conform to the different styles and sizes of boxes employed, but in each case the general design effect will be maintained. The object for which they are striving is to provide a means of ready identification of Goodrich goods to the buyer at large. It is not known that this idea has ever been followed out before in so complete a manner, and doubtless it will be regarded with considerable interest in the trade.

"RUBBER Tires and All About Them"—a book for everybody who has to do with tires.



## New Rubber Goods in the Market.

### SLEEVE FOR WEAK TIRES.

THE "IDEAL TWIN" Sleeve, illustrated, is designed to provide against blowouts or rim cuts in automobile casings.

It consists of an inner sleeve, which fits the inside of the casing, and is set in place inside the shoe, pulling both flaps out under the beads of the casing. The outer "twin" is carried up over the shoe, placing the flap underneath the bead and between the casing and the inner "twin," the lap of the inside "twin" be-



IDEAL TWIN SLEEVE.

ing brought over the bead. The casing is then replaced on the wheel, just as though no repair had been made.

The sleeves are made from the highest grade of cotton duck, from 15 to seven plies, according to size, with beveled edges to insure a smooth surface for the tube. They have a flap on each side that passes over the rim and holds the sleeve in place, and when adjusted it is claimed that they take the strain entirely off the shoe, making them invaluable where a weak spot develops on the shoe. [Voorhees Rubber Manufacturing Co., New York.]

### CLAMP FOR AUTO HOSE.

THIS clamp was designed to insure perfect circulation in the cooling system of automobiles, by fitting with equal pressure at every point in the circumference of the hose. It is stamped from sheet brass, and when used is wrapped around the hose twice, the openings on each side of the clamp meshing with each other, and kept in position by small lugs as shown in cut. A



CLAMP FOR AUTO HOSE.

T-bolt, hinged as shown with wing nut is dropped through the slot in the opposite side, the bolt being kept from coming out by the cup-like formation of this end. [Thomas. B. Reid, Morristown, New Jersey.]

### THE "JELCO" PUNCTURE-PROOF TIRE.

A TIRE that combines, with puncture-proof qualities, all the life and resiliency possessed by the best rubber tires of the past, was the object aimed at by the origination of the "Jelco" puncture-proof tire. In seeking to attain it, the ordinary rubber tire was reinforced by a layer of rubber, in which steel discs are



JELCO PUNCTURE PROOF TIRE.

imbedded in alternate layers, overlapping one another without touching each other. The principle will be readily understood from the accompanying illustration, in which the location and arrangement of the discs is clearly shown, as well as the manner in which they protect the air chamber from nails and other pointed bodies that may perforate the shoe, and which, in the tire of ordinary construction, would have resulted in an inevitable puncture. [J. Ellwood Lee Co., Conshohocken, Pennsylvania.]

### TIRE INFLATION MADE EASY.

THE LABOR of pumping up a tire, often with a pump ridiculously inadequate for the work, is avoided by the smart automobilist who makes use, in place of the pump, of the Goodyear Air Bottle. A small steel tank, charged with compressed air, it can be stowed under the seat or strapped to the foot-board. When



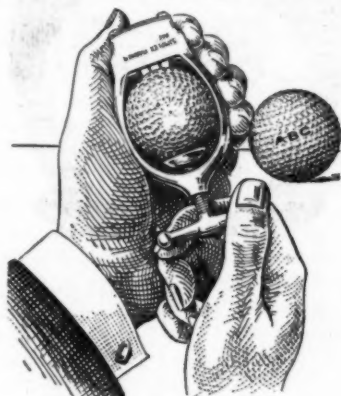
THE GOODYEAR AIR BOTTLE.

a tire needs inflating, all that is necessary is to attach the hose to the tire valve, turn on the air, and in a few moments the tire is blown up. A pressure gauge on the tank tells when the tire is properly inflated, a very important point in obtaining full ser-

vice from tires, and a table published by the manufacturers tells just what pressure each size Goodyear tire requires to do its best. The number of tires a bottle will fill varies from thirty-five 3-inch to seven 5-inch. The gauge can be set to the desired pressure, and when this is attained the air shuts off automatically. When the bottle is empty it can be exchanged for a full one at any Goodyear branch east of the Mississippi for \$1; west of the Mississippi for \$1.25. Who would take the trouble to pump up a tire or run the risks involved by running on inadequately filled tires, when for so small an outlay they can be avoided? [Goodyear Tire and Rubber Co., Akron, Ohio.]

#### GOLF BALL IDENTIFICATION.

THE handy little contrivance illustrated herewith, which is marketed as the Simplex Golf Ball Marker, meets a requirement that every golf player recognizes, i. e.: a certain means of identifying balls on the links. Small enough to be carried in the vest



SIMPLEX GOLF BALL MARKER.

pocket, it indelibly stamps the ball with the owner's name, the operation being practically instantaneous, and it thus obviates all cause for dispute as to their ownership and confusion. It is meeting with a good demand from dealers in sporting goods. [Powers & Armstrong Co., Philadelphia, Pennsylvania.]

#### THE GERALDINE—A NEW HIGH-CUT RUBBER.

A NEW, high-cut rubber is illustrated herewith.

It will be noted that on the back of this rubber are a number of vertical ribs, which form gutters, down which mud and slush, that usually accumulates on the back of the rubber and causes the soiling of skirts, etc., is caused to run, thus keeping the back of the rubber, as well as the bottom of the skirts, clean.



THE GERALDINE HIGH-CUT RUBBER.

The ribs also impart additional strength to the back of the rubbers, an important consideration in view of the strain imposed on them by the high heels so generally worn on shoes at present, and, besides this, there is a friction stay that comes forward from the back of the heel for about two inches along the top, which by reducing the elasticity of the rubber at this point and preventing it stretching too easily, gives it a firmer hold on the foot.

The rubber is also made in croquet shape, under the name of Ideal. [Hood Rubber Co., Boston, Massachusetts.]

#### THE HANDY HOSE HOLDER.

A LABOR saving device that the owner of a goodly stretch of lawn will especially appreciate, is the Handy Hose Holder, illustrated herewith. The sharp end is forced into the ground, and the nozzle, set to spray, is clamped by means of a set screw in



THE HANDY HOSE HOLDER.

any desired position, to cover the largest area practicable. With this device it is not necessary to remove the nozzle from the hose in order to sprinkle the lawn, and the tiresome standing, holding the nozzle and accompanying dampness are alike avoided. The device is strongly made of steel, black enamelled. [T. C. Prouty, Albion, Michigan.]

#### TRAVELIGHT PATENT CLUB BAGS.

As a substitute for the leather bags and travelling kits, in which the heavy leather receptacle makes up the greater portion of the weight transported, the "Travelight" patent bags have been placed on the market, made of the best fibre matting, woven cane or Scotch plaid rubber cloth, without the heavy iron frames, etc., that rust out and add so greatly to the weight; they weigh only about one-fourth as much as the leather baggage, are of greater capacity and more durable.



BAG IN PLAID RUBBER CLOTH.

The accompanying illustration shows a Travelight bag in Scotch plaid rubber cloth, with strong leather gussets and corners, covered handle and leather trim all round; brass lock and catches. The size of this bag is 15 x 10 x 8 inches, its weight about two pounds. It is water-proof, very stylish in appearance and costs much less than a leather bag of the same size. A larger size, in the same style, is also made; the bags in fibre matting and woven cane are equally attractive in appearance and fully as durable, and suit cases, animal bags for transporting dogs and cats, etc., school bags, etc., are made of like material in attractive styles. [Herman Loeb & Co., Philadelphia, Pennsylvania.]

## A RUBBER SHOE FOR THE RHINO TOE.

The accompanying illustration shows a rubber shoe adapted to fit a modified form of the new style "rhino" toe, that promises to be the ultra-fashionable foot-covering for the opening sea-



RHINO TOE RUBBER.

son. Some of the styles in leather shoes display the "rhino" effect in much more "extreme" style than the rubber shown herewith indicates. Whether the manufacturers will follow this new fad in footwear to its furthest limit, remains to be seen. [Boston Rubber Shoe Co., Boston, Massachusetts.]

## ALL METAL HOSE REELS.

Proper care will prolong the life of a garden hose almost indefinitely and the customary one or two seasons' wear is increased by several years. The tubular all-metal hose reels are a most important aid in properly caring for hose. Made wholly of



W. &amp; K. ALL METAL HOSE REEL.

metal, they do not dry and drop to pieces, warp or rot, while their tubular construction makes them light and convenient to handle. Hose reeled on one of these contrivances is drained in reeling, not kinked or strained and when reeled up can be wheeled into a shady place, thus fulfilling all the conditions essential to its preservation. The accompanying illustration shows the W. & K. No. 2 all metal reel, made with tubular frame, and nine-inch drum of extra heavy sheet steel with solid steel arms, its capacity being 100 feet of 3/4-inch hose. Bundled for shipping it weighs 15 pounds [Wirt & Knox Manufacturing Co., Philadelphia, Pennsylvania].

SOME IDEA OF THE SERVICE EXPECTED from the tires with which modern fire-fighting apparatus is equipped may be obtained from statistics published, in regard to the new motor-propelled steam fire engine, recently supplied to the New York Fire Department by the Nott Fire Engine Co., Minneapolis, Minn. This powerful machine, which develops 100 horse-power on brake test and can maintain a speed of 35 miles an hour, weighs, when loaded, approximately 16,000 pounds. The tires with which it is equipped, made by the Diamond Rubber Co. (Akron, Ohio), are of the solid pattern. The machine is twenty feet long, over all, and the wheels set almost at each end, and at high speed, over the not always too smooth pavements of New York, there will be much jolting. The engine was recently subjected by the Fire Commissioner to a severe practical test, which, both as to travelling and pumping, it very successfully withstood.

## PROGRESS OF RUBBER PLANTING.

## A YEAR'S RUBBER PLANTATION PROFITS—32½%.

THE accounts prepared for the eighth annual meeting of the Potaling Rubber Estates Syndicate, held in London, March 30, are a revelation as to the productiveness of a favorably located and well managed Hevea rubber plantation. The net profits of the property amounting to 2,205 acres, of which 1,467.2 are under cultivation to rubber and planted in Hevea, with a balance forward from 1909, were £84,620. After paying £45,000 in interim dividends of 50.75 and 75 per cent, the sum of £39,620 remained, from which the directors recommended the payment of a final dividend of 125 per cent, making a total distribution of 325 per cent. for the year and leaving a balance of £6,459 9s. 11d. to be carried forward. The following table gives a summary of the results of the company's business for the past five years.

	1906.	1907.	1908.	1909.	1910.
Yield (pounds)....	43,310	58,064	80,922	152,090	323,065
Selling price, net... 5s.	1 7/16d.	3s. 8 3/4d.	4s. 3 3/4d.	5s. 11d.	6s. 2 1/2d.
Equivalent to.....	\$1.24 7/8	\$0.89 3/4	\$1.05	\$1.44	\$1.51
Dividends.....	40%	33%	45%	125%	325%

The large profits can be the more readily understood, when it is explained that the total cost of production, f. o. b. Port Swettenham, for shipment to Europe, was figured at one shilling [24.33 cents] per pound. The manager estimates the crop of rubber for the current year at 382,000 pounds.

## A GOOD YEAR FOR GOLDEN HOPE RUBBER ESTATE.

The directors of the Golden Hope Rubber Estate Limited presented, at the annual meeting of that corporation, held in London on March 30, a report from which we take the following figures. The company has a property of 897 acres, of which 823 acres are planted in Heavea rubber. Prior to this year 30 acres were planted to Rambong, but this has all been cut out and replaced with Pará rubber. The following comparative statement covering four years, will prove of interest.

	1907.	1908.	1909.	1910.
Yield (pounds) ..	5,591	14,075	51,420	81,000
Selling price, net ..	3s. 7 3/4d.	4s. 3 3/4d.	6s. 7d.	5s. 9 1/4d.
Equivalent to ..	\$0.885	\$1.044	\$1.599	\$1.387
Dividends ..	6%	8%	30%	40%

The directors report the cutting out of all coffee growing amongst rubber, and it is now proposed to replant the acreage on which coffee is grown alone, with Hevea rubber. The cost of producing the rubber, delivered f. o. b. at Port Swettenham, was 1s. 0 3/4d. [25.08 cents] per pound, and the crop for the current year is estimated at 114,240 pounds.

## SELABA RUBBER ESTATES, LIMITED.

At the first annual general meeting of the Selaba Rubber Estates, Limited, held in London on March 30, the directors presented a report covering the fifteen months ended December 31, 1911, from which it appears that the total rubber collected amounted to 91,869 pounds, for which an average price of 6s. 5d. per pound was realized. The total cost of production, f. o. b. Teluk Anson, was just over 1s. 7d. (= 38.51 cents) per pound. The net profits amounted to £19,502 1s. 8d. An interim dividend of 5 per cent., paid in October, consumed £5,250, leaving £14,252 1s. 8d. available for distribution. From this the directors recommended the payment of a final dividend of 12 1/2 per cent., making 17 1/2 per cent. for the fifteen months, and leaving £1,127 1s. 8d. to be carried forward. The yield of rubber for 1911 is estimated by the manager at 175,000 pounds.

MR. HAROLD HAMEL SMITH, the editor of *Tropical Life*, of London, is bringing out a book on "Soil and Plant Sanitation on Cacao and Rubber Estates," which, in view of his familiarity with the subjects covered promises to be a work of no little practical value. It embraces special articles and supplementary notes by a number of authorities on tropical planting, including Mr. John Hinchley Hart, F. L. S., who was so long at the head of the botanical department of Trinidad.



## THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE B. F. GOODRICH CO., by the purchase of 158 feet on South Main street, with a depth of 191 feet on Cedar street, secures a continuous frontage of 1,500 feet on South Main street, from Falor to Cedar, and on the canal from Falor to West Exchange street, a frontage of 2,000 feet. They will shortly remodel the building occupied by their branch office in Philadelphia. The B. F. Goodrich Co. held its annual conference of branch managers in this city last month. About a hundred of these active business men gathered in the company's main offices, heard reports from their colleagues, discussed plans for increasing the business, etc. The visiting managers were subsequently entertained at a banquet.

The Republic Rubber Co. has almost completed, at Youngstown, O., a new five-story factory building. Their tire department will occupy the first and second floors, the cotton hose department the third, on the fourth will be the airbrake department, and the rubber hose department will occupy the fifth floor.

The Firestone Tire and Rubber Co. have recently completed the rebuilding of their new cement mixing building, in which new machinery has been installed. The company has lately added the following new branches to its distributing stations: 2127 Farnum street, Omaha, Neb., where George A. Martin is in charge; 165 Division street, Grand Rapids, Mich., in charge of the Grand Rapids Vulcanizing Co.; Chattanooga, Tenn., in charge of the Chattanooga Rubber Tire Works; Newark, N. J., at 6 Branford Place, in charge of The Rubber Shop, and a new Firestone service depot, in Washington, D. C., at 1736 Fourteenth street, N. W., with "Meeley the Tire Man."

The Swinehart Tire and Rubber Co. recently issued \$100,000 worth of stock, all of which has been subscribed. They have opened two more branches, one on Euclid avenue, Cleveland, Ohio, in charge of M. J. O'Connor, and one in Detroit, Mich., of which S. T. Andrews has charge.

The Portage Rubber Co., manufacturing tires and molded mechanical rubber goods, will erect, this summer, two new buildings near the present reclaiming plant at Barberton, Ohio, one of which will be 90 x 150 feet and two stories high. A quarterly dividend of 1 3/4 per cent. on the preferred stock, payable April 1, has lately been declared out of the earnings of the reclaiming plant. The annual stockholders' meeting of the company was held on March 6. The directors elected are James Christy, J. W. Miller, John Kerch, Hon. Dayton A. Doyle, M. S. Long, James D. Raw, A. S. Mottinger and W. W. Wildman. The officers elected are as follows:

President.—JAMES CHRISTY.  
Vice-President.—J. W. MILLER.  
Treasurer.—ARTHUR S. MOTTINGER.  
Secretary.—GILLUM H. DOOLITTLE.  
General Manager.—W. W. WILDMAN.

The Biggs Boiler Works, manufacturing rubber machinery, contemplate the erection of a large building, to be equipped with new and improved machinery which their increasing business makes necessary.

C. F. Adamson, a mechanical rubber engineer of Akron, has entered into partnership with M. C. McCormick.

THE Goodyear Tire & Rubber Co. have recently completed additions to their manufacturing facilities, which, with the volume of orders on hand, will necessitate the employment of some 1,500 more men and 600 more girls who are now being

recruited at different points. They expect to increase their daily tire output to 3,000. The added buildings include a power-house, with engines of 120 horsepower, and a 250-foot stack of 12 feet interior diameter. Six new 700-horsepower boilers have been added to the former steam generating outfit. Among the contracts on the company's order book are 10,000 waterproof boxes for the Ohio National Guard, aeroplane material (including cover bumpers, shock absorbers, tires for alighting wheels and waterproof fabric) for the Wright Bros. and Glenn Curtis, and balloon material for Captain Baldwin.

The Diamond Rubber Co. expect to enlarge their spacious automobile garage this summer. The company has been extensively congratulated on the success of the advertising scheme it used at the Boston Automobile Show—an aeroplane, held up in the air by three kites, with a dummy in the seat and a propeller that revolved. It looked as though moving, and deceived all who were not in the secret. The company's branch at Philadelphia, Pennsylvania, will shortly move into the first four stories of a new eight-story building, at Spring Garden and Broad streets. E. H. Fitch will be in charge, with R. McTamany as chief clerk.

The following statistics, from the year book of the Akron Chamber of Commerce, will give some idea of the importance of the city and of the magnitude of the rubber interest, to which it is so largely due:

Population, United States census 1910 .....	69,067
Area, square miles .....	11.48
Miles of paved streets .....	70
Miles of sewers .....	115
Acreage of parks .....	103.37
Aggregate bank deposits, Nov. 1, 1910 .....	11,113,625
Gain over previous year .....	9%
Postoffice receipts, Oct. 1, 1909—Oct. 1, 1910 .....	325,974
Increase over previous year .....	25%
Bank clearings, Nov. 1, 1909—Nov. 1, 1910 .....	49,855,000
Increase over previous year .....	37%
Increase in building permits, 1910 over 1909 .....	83%
Increase in real estate transfers, 1910 over 1909 .....	106%
105 factories with aggregate capital of \$75,142,000 give employment to 23,450 employees.	

## AKRON'S RUBBER INDUSTRY.

Firm.	Established.	Capital.	Employees.
B. F. Goodrich Rubber .....	1869	\$20,000,000	5,000
Diamond Rubber .....	1894	10,000,000	4,500
Goodyear Tire & Rubber .....	1898	4,000,000	1,700
Firestone Tire & Rubber .....	1900	4,000,000	900
American Hard Rubber .....	1904	2,500,000	300
Swinehart Tire & Rubber .....	1904	400,000	150
Buckeye Rubber .....	1900	200,000	225
Miller Rubber .....	1904	500,000	300
Alkali Rubber .....	1904	1,000,000	350
Star Rubber .....	1907	250,000	125
Royal Rubber .....	1909	200,000	15
American Tire & Rubber .....	1910	200,000	15
Standard Rubber .....	1901	50,000	6
Motz Tire & Rubber .....	1905	50,000	15
Lyon Rubber .....	1904	15,000	15
Federal Waterproofing Co. ....	.....	100,000	..
		\$43,674,000	13,601

## THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

CONTINUOUS rains during the past month, while they helped dealers in rainproof goods, somewhat, had an adverse effect on business in other lines, even factories running short handed, and the sales of mechanical rubber goods being restricted. With the advent of bright weather, an improvement has set in and good spring business is now anticipated.

The call for bids on 10,000 feet of fire hose, made by the fire commissioners of this city, promised at first to interest the dealers and manufacturers' representatives here. The nature of the specifications, however, served to cool their ardor. They go minutely into every detail of manufacture, even to number and quality of threads in the fabric, the quantity of pure rubber, which must be 50 per cent. and other items. If these require-

ments are filled, the makers must also give a guarantee that the hose will stand high-pressure and other tests at the end of two or three years. The only company that was willing to comply with all these requirements and made an unrestricted bid, put their price at 85 cents to \$1.15, and, as this is very high, it is believed that the bids will be re-advertised, possibly in modified form.

The Plant Rubber and Supply Co., which bought the presses, etc., formerly owned by the Barton Packing and Rubber Co., expect to have their plant in operation by April 1. It will be in charge of Mr. Whitehead, formerly superintendent of the Barton factory.

President Edward R. Rice, of the United States Rubber Co. (New York) and L. J. Gervin, a rubber merchant of Los Angeles, were recent visitors in San Francisco.

A new branch has been opened by the Diamond Rubber Co. (Akron, Ohio), at Fresno, California, where they have taken a store with 5,000 feet of floor space. The company's general manager on the Pacific Coast, C. E. Mathewson, paid a recent visit to Los Angeles, California, to select a building for a branch in that city.

F. S. Winslow, who had charge of the Pacific Coast Rubber Company, has been engaged by the Gorham-Revere Rubber Co., who have taken over the Pacific Coast Company's stock. This does not include their stock in the Northwest, as they are a separate concern there. The Gorham-Revere Rubber Co. expects to instal a new store in Portland, Ore., and to double the capacity of their Seattle branch.

M. E. Murray, who comes to this city for the purpose of assuming the management of the Republic Rubber Co.'s affairs on the Pacific Coast, is here, and will make his headquarters at their San Francisco branch, the Phoenix Rubber Co.

The purchasers of the factory department of the Phoenix Rubber Co. will maintain the factory on First street, near Howard. They have named their concern the Panama Rubber Co.

The B. F. Goodrich Co. (Akron, Ohio), have secured the services of Carl Webb, formerly with the Pacific Coast Rubber Co. He will have his headquarters at Los Angeles and represent them in the southern portion of the State.

### THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

**T**RADE conditions generally are unchanged; mechanical mills report fair volume of business; tires, drug sundries and specialties good; insulated wire less active.

Thermoid Rubber Co. continue busy; mechanical and tire departments reported working nights.

The Empire Rubber Manufacturing Co., working five nights weekly, have business on hand that warrants continuation of this activity. Hereafter, they will manufacture Peerless Red Inner Tubes, to the exclusion of the grey. The standard gauge tube will be known as "Standard," the extra heavy as "Peerless," as heretofore.

The Whitehead Brothers' Rubber Co. made a "hit" with their glazed cotton covered vacuum hose and the sales, which have already attained large proportions, are steadily increasing. They have put on an automobile to carry their office help to and from business. Their recent completion of a 200-foot fireproof warehouse is further indication of their progressiveness.

The Mercer Rubber Co., working three nights a week, report prospects, for future business good.

Essex Rubber Co., Inc., who until recently manufactured only

specialties and have now added a full line of sheet packings, report the last four weeks' business the best they have ever had.

The wedding of Miss Hamill and Mr. Bruce Bedford, of the Luzerne Rubber Co., in February, was one of the season's social events. The newly-married couple went on a bridal trip to Bermuda.

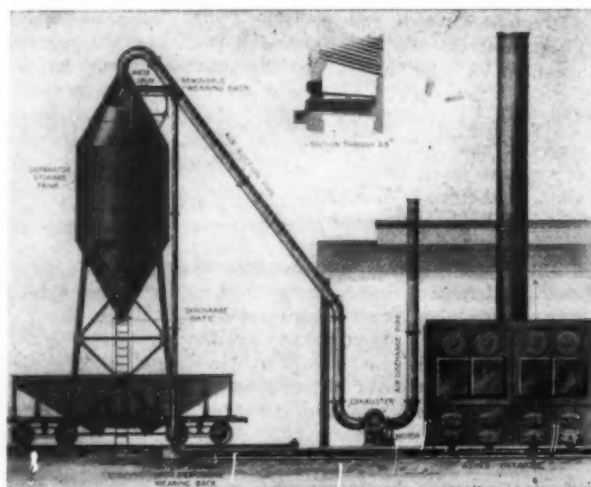
The return of Mr. Harry L. Boyer, of the Joseph Stokes Rubber Co., and family, from Florida, is a reminder that some people have the happy faculty of being able to combine business with pleasure.

Frederick R. Sayen, secretary of the Mercer Rubber Co., who, on finishing his course at Haverford, elected to travel in place of entering another college, recently addressed the Republican club of this city on the subject of his visit to the Panama Canal. Though but twenty-six years of age, he is a fluent and interesting speaker.

A contract worthy of note was the recent order of the Timken Detroit Axle Co. for 400,000 feet of Autobestine Break Liner, manufactured by the Woven Steel Hose and Rubber Co. This is a specialty of Trenton origin that has "caught on" with the automobilists.

### AN AUTOMATIC ASH REMOVER.

**V**ACUUM cleaners for homes, hotels and offices are so common and so widely accepted as to cause no comment. That a principal analogous to that used in vacuum cleaning should be applied to the removal of ashes from beneath boilers in great manufacturing plants will, however, strike many as a novelty.



DARLEY SUCTION ASH CONVEYOR.

The system which has already been adopted by certain rubber manufacturers, is known as the Patented Suction Conveyor System and is installed by the Darley Engineering Co., of New York.

Described briefly it consists of an iron conveyor pipe, six, eight or ten inches in diameter, which runs from beneath the boiler fronts to an elevated storage tank. Other parts are: a separator, an exhaustor, and a water jet. The separator, which is really a storage tank also, has a discharge gate at its lower end for dumping into cars, which may be run directly beneath it.

The exhaustor may be a simple exhaust fan or a blower, and is either steam or motor driven. Just before entering the separator a water jet sprays the material that is being removed; cools it and settles all dust.

The system is very simple, can be adapted to any plant, and will handle from 200 to 500 pounds of ashes per minute.

## News of the American Rubber Trade.

### NEW YORK RUBBER CO.—A PRESENTATION.

THE officers and office staff of the New York Rubber Co., New York and Matteawan, New York, united in the presentation, on March 1, to the former president of the company, Mr. John P. Rider, of a loving cup, suitably inscribed, as a token of appreciation of his friendly feeling and uniform kindness towards those with whom he had been associated in the past. Mr. Rider in accepting the gift, made a felicitous speech in which he manifested with feeling his appreciation alike of the beautiful cup and of the sentiments that prompted its presentation.

### INTERCONTINENTAL RUBBER COMPANY: DIVIDEND.

ANNOUNCEMENT is made that the directors of the Intercontinental Rubber Co. (New York), have declared the regular quarterly dividend of  $1\frac{3}{4}$  per cent. on the preferred shares, payable March 31, 1911, to stockholders of record March 20. The directors also declared a dividend of 1 per cent. on the common stock of the company, payable May 1, 1911 to holders of common stock of record at 3 p. m. on Friday, April 21. The last named distribution was stated to be not a quarterly dividend, but a dividend paid because the earnings of the company justified it, in accordance with the policy of the directors to make a distribution whenever the earnings and conditions of the company warranted it.

### REPUBLIC RUBBER CO.

THE Republic Rubber Co., Youngstown, O., have opened a branch establishment at 126 West Sixth street, St. Paul, Minn., under the management of M. F. W. Osmun, in connection with which they have installed a completely equipped repair department. At 1514 Hennepin avenue, Minneapolis, they have established a branch sales room, in charge of which is Mr. Fred Weil, formerly north-western representative for the Excelsior Supply Co., of Chicago. In view of the growing importance of the twin cities as an automobile trade center, both branches will carry a full line of the company's goods, including their Republic "Stag-gard" Tread and Republic Motor Truck Tires.

### RUBBER GOODS MANUFACTURING CO. DIVIDEND.

At a meeting of the board of directors of the Rubber Goods Manufacturing Co. (New York), the forty-eighth regular quarterly dividend of  $1\frac{3}{4}$  per cent. was declared on preferred stock, payable to stockholders of record at 3 p. m., March 10. On March 25 the company paid a 2 per cent. dividend on its common stock. The next annual meeting of the company will be held in Jersey City, on April 13.

### MIEGEL RUBBER MANUFACTURING CO.

THE Miegel Rubber Manufacturing Co. (Stamford, Connecticut), the incorporation of which was announced in the March 1 number of THE INDIA RUBBER WORLD, will engage in the manufacture of a pneumatic tire for automobiles, of an entirely new type of construction, also in the manufacture of mechanical and surgical rubber goods, some new, some of improved design, and will deal in all kinds of automobile accessories, including a full line of everything used by the automobilist. The officers of the company are as follows:

President—CHARLES W. MIEGEL.  
Vice President—CHARLES L. THOMPSON.  
Secretary and Treasurer—WILLIAM T. DE WATERS.

### ALLING RUBBER CO.

THE Alling Rubber Co. (Troy, New York); dealing in rubber goods of every description, including sporting goods and automobile tires, have leased the store and basement at 101 North Pearl street, Albany, New York, for a term of five years, and will conduct a general rubber business there.

### CANADIAN CONSOLIDATED—ANNUAL.

IN HIS annual address to the shareholders, at the yearly meeting, President D. Lorne McGibbon, of the above company, reported a satisfactory business for the past twelve months, both as to sales of general rubber goods and footwear and profits earned. The net income for the year amounted to \$583,243.39, compared with \$573,319 for the preceding year, and after payment of interest on bonds and dividends on stocks, to the amount of \$402,499.75, there was left \$180,743.64 to be added to the surplus account, which now amounts to \$257,444.08.

The president reported that in order to meet the demands of the retail trade that they be allowed to purchase direct from the manufacturer, arrangements have been effected whereby the main company will act as selling agents of all the rubber and felt companies controlled by it. The arrangements thus made, will concentrate the selling staffs of the subsidiary companies under one general organization and advance the work of economic consolidation of purchasing, manufacturing and selling.

Following are the directors elected at the annual meeting: D. Lorne McGibbon, Geo. W. Stephens, J. H. McKechnie, T. H. Rieder, F. H. Ward, Shirley Ogilvie, D. Coulson, E. W. Nesbitt, S. P. Colt, Alex. Pringle, W. R. Allan, V. E. Mitchell, Homer E. Sawyer, E. S. Williams and E. R. Rice. The directors elected officers, as follows:

President—D. LORNE MCGIBBON.  
First Vice President—Geo. W. STEPHENS.  
Second Vice President—J. H. MCKECHNIE.  
Secretary—Treasurer—WALTER BINMORE.  
Assistant Treasurer—LEONARD D. SHAW.  
Assistant Secretary—C. H. ANCRUM.

### THE SWINEHART TIRE AND RUBBER CO. IN NEW QUARTERS.

THE Swinehart Tire and Rubber Co., of New York, have moved into their new salesrooms at No. 1924 Broadway, that city. Their improved accommodations will enable them to carry a complete line of Swinehart pneumatic and solid tires, and their friends and patrons are invited to visit them in their new quarters.

### NEW BOSTON HEADQUARTERS FOR THE FISK RUBBER CO.

THE Boston branch of the Fisk Rubber Co. (Chicopee Falls, Massachusetts), is now installed in the new Fisk building at Nos. 811-813 Boylston street, Boston. The handsome five-story structure, which is an attractive addition to Boston's automobile row, has a frontage of 30 feet and is 100 feet deep, with a facade of pressed brick with terra cotta trim.

In the basement, which is the full extent of the building, is the shipping and receiving department, with storage accommodations, including racks for 4,000 tires. The general offices and salesroom, occupying the ground floor, are sumptuously fitted in polished oak and plate glass and on the top floor is a completely equipped repair department, with facilities for perfectly repairing tires of every make. All departments are connected by freight and passenger elevators.

The new building is a notable addition to Boston's modern business edifices, and as to convenience and architectural beauty, takes a foremost place among the twenty-three branch establishments the Fisk Rubber Co. maintain in leading cities throughout the country.

### MOTOR TRUCKS THAT MADE GOOD.

THE United States Tire Co. (New York), made practical use of the motor truck, on a recent occasion, when a consignment of 500 tire casings, destined for New York and needed to fill orders, were stalled at their plant at Hartford, Conn., owing to a strike of expressmen. It occurred to President J. D. Anderson, that motor trucks might be pressed into service to transport them



and Superintendent Charles B. Whittlesey undertook the job. A five-ton Mack truck and a big Auto-car truck were loaded for the journey and led by Mr. Whittlesey, in a pilot car, started at 8 p. m. on the 127-mile run to New York. All that night, all next day and the next night, the heavy trucks plowed and wallowed through the mud, four hours being consumed in negotiating the roads of one town in New York State, but at three o'clock on the second morning after leaving Hartford, the ponderous vehicles arrived safely at their destination, covered with mud, but with their freight in good shape and on time for filling the orders.

#### THEODORE HOFELLER & CO.

THE co-partnership between Theodore Hofeller and Julius Hofeller, doing business under the firm name of Theodore Hofeller & Co., at Buffalo, New York, as dealers in scrap rubber, metals, etc., has been dissolved by mutual consent. The business will be continued by Theodore Hofeller and his son Eugene D. Hofeller, at the present address, Nos. 206-226 Scott street, and will be incorporated under the name of Theodore Hofeller & Co. with a capital of \$200,000. Theodore Hofeller will be president and Eugene D. Hofeller, secretary and treasurer of the new company.

#### PERSONAL MENTION.

Charles C. Measure, for three years past branch manager in New York for the Goodyear Tire and Rubber Co., has gone to the factory at Akron and is succeeded by John B. Maus.

Byron C. Dowse, for the past 3½ years president of the G & J Tire Co. (Indianapolis, Indiana), resigned as head of that corporation on March 10. As far back as 1899, when the Rubber Goods Manufacturing Co. acquired the Indianapolis plant and marketed tires under the G & J patents, Mr. Dowse had been actively connected with the concern, and prior to this, for four years, he was selling representative of the Gormully & Jeffery Manufacturing Co., Chicago. He acted for a number of years as general representative of the company, and in 1894, when the G & J Chicago branch was opened, he became its manager, taking entire charge of the sales department for the Middle West. In 1907 he was called to Indianapolis to assume the presidency of the company. That his administration has been a successful one is proved by the fact that during the three years of his presidency the Indianapolis plant has more than doubled in capacity, while during the same period the sales of its product have increased upwards of 300 per cent. Mr. Dowse takes with him, in his retirement, the sincere good wishes of his former colleagues, while his many friends in the trade will be pleased to hear of his success in any undertaking into which he may, in future, enter.

Roy L. Dorr, after ten years' service with the United States Rubber Co. (New York), has resigned to become New York representative of Fairbanks & Dorr, woolen manufacturers, who have a very large and prosperous plant in Newport, N. H. In 1901, Mr. Dorr joined the Boston Rubber Shoe Co., as assistant to the purchasing agent, Mr. Yeomans. Two years later, Mr. Yeomans, having been in the meantime transferred to the New York office of the United States Rubber Co., Mr. Dorr became purchasing agent for the Boston Rubber Shoe Co., and retained that position until 1908, when he was likewise transferred to the New York office of the United States Rubber Co., where he assumed charge of the rubber supply for the company's factories, filling the duties of the position very satisfactorily. Mr. Dorr, who is one of the most popular of the young men of late identified with the rubber trade, takes with him, to his new field, the universal good wishes of his associates.

C. J. Bailey, of C. J. Bailey & Co. (Boston, Massachusetts), manufacturers, jobbers and retailers of rubber goods generally, and originators of Bailey's famous rubber brushes, is making an extended trip through the West Indies and Central America, which will include Jamaica, Colombia and the Canal zone.

#### UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks ending March 25:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,334,000.]

Last Dividend, April 30, 1900—1%.

Week February 25	Sales 16,594 shares	High 46	Low 43
Week March 4	Sales 53,430 shares	High 47½	Low 39
Week March 11	Sales 1,825 shares	High 42	Low 39½
Week March 18	Sales 13,750 shares	High 43¾	Low 41
Week March 25	Sales 13,550 shares	High 44½	Low 42

For the year—High, 47½, March 1; Low, 36, Jan. 6.  
Last year—High, 52½; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, January 31, 1911—2%.

Week February 25	Sales 2,540 shares	High 113¾	Low 112
Week March 4	Sales 1,710 shares	High 114½	Low 112
Week March 11	Sales 200 shares	High 112	Low 112
Week March 18	Sales 1,100 shares	High 113	Low 112
Week March 25	Sales 220 shares	High 113	Low 112½

For the year—High, 114½, March 1; Low, 109½, Jan. 18.  
Last year—High, 116½; Low, 99.

SECOND PREFERRED STOCK, \$2,965,000.

Last Dividend, January 31, 1911—1½%.

Week February 25	Sales 2,400 shares	High 78	Low 76½
Week March 4	Sales 1,350 shares	High 79	Low 77
Week March 11	Sales ..... shares	High ..	Low ..
Week March 18	Sales 400 shares	High 77	Low 77
Week March 25	Sales 100 shares	High ..	Low ..

For the year—High, 79, March 1; Low, 72½, Jan. 31.  
Last year—High, 84; Low, 59½.

SIX PER CENT. TRUST GOLD BONDS, \$19,000,000.

Outstanding of the 1908 issue of \$20,000,000.

Week February 25	Sales 90 bonds	High 103¾	Low 103½
Week March 4	Sales 50 bonds	High 103¾	Low 103¾
Week March 11	Sales 42 bonds	High 103¾	Low 103½
Week March 18	Sales 42 bonds	High 103¾	Low 103½
Week March 25	Sales 52 bonds	High 103¾	Low 103½

For the year—High, 104, Feb. 11; Low, 103, Jan. 7.  
Last year—High, 104½; Low, 101¾.

#### NEW DISTRIBUTING POINTS FOR FIRESTONE TIRES.

In order to make Firestone tires and demountable rims immediately available to motorists everywhere, the Firestone Tire & Rubber Co. (Akron) has increased its number of wholesale distributing stations considerably of late. A new direct factory branch will be opened in Omaha, Nebraska, March 1, at No. 2127 Farnam street in charge of George M. Martin. Following are the more recently established distributing agencies: Grand Rapids Vulcanizing Co., No. 165 North Division street, Grand Rapids, Michigan; Chattanooga Rubber Tire Works, No. 808 Broad street, Chattanooga, Tennessee; The Rubber Shop, No. 6 Branford place, Newark, New Jersey.

#### TRADE NEWS NOTES.

The Goodyear Tire and Rubber Co. (Akron, Ohio), have recently completed some extensive additions to their manufacturing plant. This will enable them to add 1,500 employees to their working force.

George A. Alden & Co. (Boston, Massachusetts), will exhibit at the International Rubber Exhibition in London, in June, a full line of manufactured samples to show the great worth of their M R product to rubber manufacturers. Mr. George Watkinson, their representative on M R has already left for London to arrange for the exhibit.

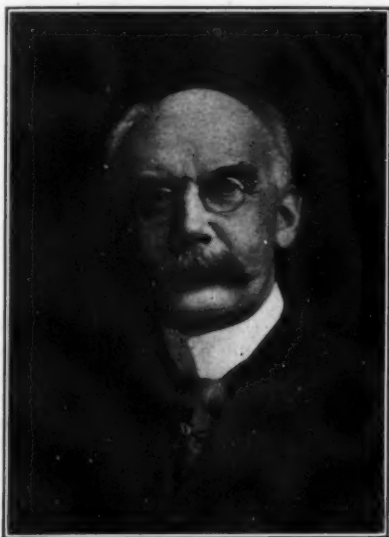
President H. T. Dunn, of the Fisk Rubber Co. (Chicopee, Massachusetts), has recently returned from a tour of inspection of the company's various branches, that took him clear across to the Pacific coast and as far south as Atlanta, Georgia, and New Orleans, Louisiana, in which latter city the company has recently established a new branch.

The employees of the Walpole Rubber Works, Walpole, Mass., held an assembly on March 17, at which about 200 couples were present. John C. McGuane had charge of the floor, and the participants were enthusiastic over the success of the affair.

The Converse Rubber Shoe Co. (Malden, Massachusetts), has settled with the thirteen companies with which it had insured the portion of its factory recently destroyed by fire, for \$195,000.

## NORRIS-DE BEROLDINGEN.

SAMUEL NORRIS, secretary of the United States Rubber Co. (New York), was united in matrimony, on March 18, to the Countess Margot de Beroldingen, at the home of Mrs. Joseph F. Stone, the bride's mother, at Newport, Rhode Island. Mr. and Mrs. Norris are at present enjoying a trip in the South. Well known in rubber trade circles, as attorney and subsequently secretary of the United States Rubber Co., Mr. Norris was born in 1862 at Bristol, Rhode Island. The greater portion of his youth was passed in Europe, where his father represented E. Remington & Sons, in the sale of small arms. In 1883 he gradu-



SAMUEL NORRIS.

ated with honors in history and in the general course, from Harvard, and after attending law school at Harvard for two years, was admitted to the bar in Rhode Island in 1883 and spent some time in the study of the law in the office of Colonel Samuel P. Colt, attorney-general of that state. He then took up the practice of law in Providence, which he relinquished, in 1897, to become attorney for the United States Rubber Co. In 1901, he was elected secretary of the company and still fills the dual office. From 1897 until 1899, Mr. Norris served as a member of the Rhode Island Legislature. For the past few years he has made his home chiefly in New York, where, as a member of the University and other clubs and in business circles, he has made many friends.

The wedding ceremony was attended by a comparatively small gathering of the immediate relatives and friends of both parties, among whom were a number of the directors of the United States Rubber Co., whose gift, a valuable and exceedingly beautiful chest of Tiffany silver, was conspicuous among the wedding presents. A wedding breakfast and brief reception, at which the newly-wedded couple received the congratulations of their friends, followed the ceremony. On their return from the wedding trip, Mr. and Mrs. Norris will take up their residence in New York.

## DIAMOND RUBBER COMPANY EXPANDING.

THE Diamond Rubber Co. (Akron, Ohio), have recently completed a new plant, on Jackson street, in that city, which they have equipped for the manufacture of rain coats or weather-proof garments answering that description. The company now has upwards of 40 branch establishments in the different cities, the latest additions to their number being stores for the distribution of their tires to the trade at Saginaw, Mich., and in the adjacent city of Toledo, at No. 740 Madison avenue, where C. W. Greene is in charge.

## WESTERN ELECTRIC CO.

THE fiscal year of the above company having been changed to terminate on December 31, in place of November 30, as heretofore, the report to stockholders dated March 20, covers thirteen instead of twelve months. The company's sales, during this period, reached a total of \$68,375,150, as compared with \$45,575,138 for the preceding year of twelve months, an increase equivalent to 38.5 per cent. per annum. This increase was well distributed over the different lines of merchandise and among the various classes of customers. With receipts from other sources, the company's total income amounted to \$68,861,455. Deducting from this \$63,442,286, the cost of product, there was left the sum of \$5,419,169, for distribution, which was disposed of as follows: interest paid, \$884,893; carried to reserves, \$1,150,000; paid in dividends, \$1,700,000; carried to surplus, \$1,684,276.

Reference is made in the report to the policy of the company of concentrating its manufacturing operations at the plant at Hawthorne, Illinois, which is undergoing constant enlargement and improvement with this end in view. In furtherance of this plan, the company's Clinton street and Polk street properties in Chicago, were sold for \$3,247,204.09. As these properties were carried on the books at \$2,759,971.14, there was a profit of \$487,232.95 on the transaction, which has been carried to reserve. Additions to the Hawthorne plant, to cost about \$1,000,000, have been authorized for 1911.

The report also refers to the sale of \$6,250,000 first mortgage 5 per cent. bonds, held as security for \$5,000,000, two year, 4½ per cent. collateral trust notes, issued January 1, 1911. The proceeds of the sale were used to take up the notes, on January 1, 1911, and to provide for future needs of the company.

The balance sheet that accompanies the report shows assets amounting to \$58,385,945, with total liabilities, including general reserves of \$2,846,506 and all capital liabilities, of \$39,264,883, leaving a surplus of \$19,121,062, on January 1, 1911.

## NEW INCORPORATIONS.

AUTOMOBILE TIRE INNERLINING Co., January 3, 1911, under the laws of Ohio; authorized capital, \$25,000. Incorporators: Mark D. Bruner, William Stacey, M. J. Roche, G. A. Macduff, and C. L. Benz. Location of principal office: Cincinnati, Ohio.

The Diamond Rubber Co., a New York corporation, qualified January 11, 1911, to do business in Wisconsin, by filing a certified copy of its articles of incorporation at Madison.

Economy Waste and Packing Co., of New Jersey, March 10, 1911, under the laws of New Jersey; authorized capital \$100,000. Incorporators: W. F. Corsuch, E. A. Timlin, and J. St. Clair Mitchell—all of No. 164 Market street, Newark, New Jersey.

The B. F. Goodrich Rubber Co., December 1, 1910, under the laws of Colorado; capital \$10,000. Incorporators: F. F. Sargeant, L. G. Larson and T. M. Morrow—all of Denver, Colorado.

Gorham-Revere Rubber Co., December 29, 1910, under the laws of California; capital \$50,000. Directors: F. G. Sargent, W. R. Pierce, W. B. Heckmann—all of Alameda, California; J. B. Brady and W. D. Rigdon—both of San Francisco, California. Place of business: San Francisco.

Halpern & Schoenfeld, Inc., March 2, 1911, under the laws of New York; capital \$5,000. Incorporators: Isaac Halpern, No. 231 East Tenth street, New York; Philip Schoenfeld and Esther Schoenfeld—both of No. 205 South Third street, Brooklyn, New York. The object of the company is to manufacture rubber cement. The office of the company will be located in Brooklyn.

Hardman Tire and Rubber Co., of New York, March 3, 1911, under the laws of New York; authorized capital \$15,000, fully paid and non-assessable. Incorporators: E. W. Tabor (president), Philip R. Straus (vice-president), and Benjamin G. McCague (secretary and treasurer)—all of No. 1931 Broadway, New York. The company will sell the automobile tires manufactured by the Hardman Tire and Rubber Co., of Belleville, New Jersey.

E. J. McCormick Rubber Co., January 23, 1911, under the laws of New York; capital \$25,000. Incorporators: John Behrens, John Henry Behrens—both of Hasbrouck Heights, New Jersey, and Edward J. McCormick, Brooklyn, New York. Location of principal office: Manhattan.

Monad Rubber Co., March 6, 1911, under the laws of Connecticut; authorized capital \$125,000. Incorporators: Charles E. Williamson, Paul L. Miller, and F. W. Allan.

New York Rubber Reclaiming Co., January 21, 1911, under the laws of New York; capital \$300,000. Incorporators: James M. Waterbury, Jr., No. 156 Madison avenue, Grenville F. Waterbury, No. 80 South street, and John C. Waterbury, Westchester—all of New York.

Oxford Rubber Co., February 21, 1911, under the laws of Massachusetts; authorized capital \$75,000. Incorporators: John A. Comstock, Stoughton, Massachusetts, William Edward Allen and John J. Sullivan—both of Cambridge, Massachusetts.

Security Spring Tire Co., January 27, 1911, under the laws of Wisconsin; capital \$50,000. Incorporators: B. F. Fry, H. A. Fry, G. J. Bruce, W. J. Durham, and F. S. Durham. Location of the principal office: Wautoma, Wisconsin.

## TRADE NEWS NOTES.

The Standard Rubber and Cable Co. (Bridgeport, Connecticut), whose incorporation was recorded in THE INDIA RUBBER WORLD of November 1, 1910, are engaged in the manufacture of a line of special moulded and cut rubber goods for mechanical purposes, also tubing, sheet rubber, unvulcanized gum, fabrics for the auto tire repair trade and rubber cement, and a complete line of rubber covered wire, both braided and plain, for automobile and electrical trade in general.

The Standard Auto Tire Co. (Lincoln, Nebraska), announces the accession to its official staff of N. J. Marvin, who will fulfill the duties of vice president and secretary of the corporation.

The General Rubber Co. (New York), paid a 20 per cent. dividend to its stockholders on March 28.

As business manager of the Derby Rubber Co. (Derby, Connecticut), P. B. Price succeeds Mr. Joseph B. Roberts, who resigned on February 28. A. H. Golden is at present the company's salesman.

G. W. Husted, for many years connected with a leading carriage manufacturer, is now identified with the Fairfield Rubber Co., Fairfield, Conn., manufacturers of carriage cloth, imitation leather, etc., and will in future represent them on the road.

## Review of the Crude Rubber Market.

MARCH weather with all of its uncertainties and sudden changes, was no more erratic than the March crude rubber market. It was a month of sharp fluctuations and almost daily surprises. During the first two days of the month up river fine sold as high as \$1.68@1.70, which were the highest figures of the month. At the end of the first ten days the prices had dropped to \$1.59@1.60, and by the twentieth of the month were down as low as \$1.50@1.53. On the afternoon of March 22, the price of up river fine suddenly advanced 6d. in the London market. On the twenty-third there was some active bidding in the domestic market and sales were again reported as high as \$1.58. This sudden advance, which disturbed market conditions and made many manufacturers nervous, was very short-lived, and within twenty-four hours prices again began to slide downward. By the close of the fourth week of the month, prices were again below \$1.50, and at the end were in the neighborhood of \$1.40 or almost 30 cents below the opening prices. While there has been fairly steady buying throughout the month by actual consumers, the market uncertainties have been such that speculative purchases have been few. Large purchasers have been conservative, but small dealers report a fair demand from day to day buyers. The auction sales, Ceylons in London, March 28 and 29, brought out very unsatisfactory prices. Smoked sheets averaged \$1.60@1.61, pale crepe, \$1.51@1.52, and biscuits sold as low as \$1.48. In this market smoked sheets were quoted as low as \$1.59@1.60. The auction sale of Africans in Antwerp earlier in the month was considered fairly successful, the prices obtained being satisfactory. The success of this sale is held responsible for the sudden advance during the fourth week of the month and the quick decline which followed is attributed to the efforts of the London bear clique, which was determined that the market should not be strong when the Ceylon auction was held. Locally, the market has largely followed the lead of London. At the close of the month trading is restricted to necessity purchases and prices are at the lowest point since March 1.

## NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago, and March 30—the current date:

PARÁ.	Apr. 1, '10.	Mar. 1, '11.	Mar. 30, '11.
Islands, fine new.....	252@253	152@153	130@131
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	270@271	164@165	139@140
Upriver, fine old.....	272@273	166@167	144@145

Islands, coarse, new.....	105@106	89@ 90	62@ 63
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	172@173	117@118	108@109
Upriver, coarse old.....	174@175	119@120	110@111
Cametá .....	130@131	93@ 94	79@ 80
Caucho (Peruvian), ball..	174@175	117@118	108@109
Caucho (Peruvian), sheet	135@136	none here	none here

## PLANTATION PARA.

Fine smoked sheet.....	260@261	183@184	159@160
Fine pale crepe.....	—@—	168@170	145@146
Fine sheets and biscuits..	—@—	158@159	142@143

## CENTRALS.

Esmeralda, sausage.....	152@153	107@108	105@106
Guayaquil, strip.....	120@121	none here	none here
Nicaragua, scrap.....	152@153	105@106	103@104
Panama .....	none here	none here	none here
Mexican, scrap.....	151@152	104@105	103@104
Mexican, slab.....	none here	65@ 66	62@ 63
Mangabeira, sheet.....	none here	72@ 73	68@ 69
Guayule .....	99@100	75@ 76	64@ 65
Balata, sheet.....	—@—	95@ 96	93@—
Balata, block.....	—@—	72@ 73	67@ 68

## AFRICAN.

Lopori, ball, prime.....	204@205	132@133	123@124
Lopori, strip, prime.....	none here	none here	none here
Aruwimi .....	none here	125@126	122@123
Upper Congo, ba'l, red...	170@171	132@133	125@126
Ikelemba .....	none here	none here	none here
Sierra Leone, 1st quality..	170@171	135@136	122@123
Massai, red .....	171@172	135@136	122@123
Soudan niggers .....	none here	none here	none here
Cameroon, ball .....	112@114	88@ 90	79 @80
Benguela .....	none here	80@ 81	79@ 80
Madagascar, pinky .....	125@126	105@106	100@101
Accra flake .....	34@ 35	43@ 44	40@ 41

## EAST INDIAN.

Assam .....	none here	105@106	104@105
Pontianak .....	8¼@8½	7¼@7½	7@7¼
Borneo .....	none here	none here	none here

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	6\$000	Upriver, fine.....	7\$400
Islands, coarse.....	2\$500	Upriver, coarse.....	4\$000
		Exchange .....	16d.

Latest Manáos advices:

Upriver, fine.....	8\$200	Exchange .....	16 1/16d.
Upriver, coarse.....	5\$400		



**Statistics of Para Rubber (Excluding Caucho).**

NEW YORK.

	Fine and Medium	Coarse.	Total 1911.	Total 1910.	Total 1909.
Stocks, January 31.....tons	203	39 =	242	232	235
Arrivals, February.....	694	508 =	1,202	2,005	1,754
Aggregating .....	897	547 =	1,444	2,237	1,989
Deliveries, February.....	763	516 =	1,279	2,051	1,604
Stocks, February 28.....	134	31 =	165	186	385

	PARA.	ENGLAND.	
Stocks, January 31, tons	1911. 1,765	1910. 1,075	1909. 1,225
Arrivals, February.....	4,695	3,660	3,930
Aggregating .....	6,460	4,830	5,005
Deliveries, February....	3,215	4,365	3,295
Stocks, February 28..	3,245	465	1,710

	1911.	1910.	1909.
World's visible supply, February 28.....tons	6,800	4,221	4,675
Para receipts, July 1 to February 28.....	21,715	23,130	22,340
Para receipts of caucho, same dates.....	4,080	3,910	4,090
Afloat from Para to United States, Feb. 28..	665	1,980	2,000
Afloat from Para to Europe, February 28..	1,340	1,170	1,420

**African Rubbers.**

NEW YORK STOCKS (IN TONS).

February 1, 1910.....	134	September 1, 1910.....	300
March 1.....	161	October 1.....	375
April 1.....	121	November 1.....	100
May 1.....	125	December 1.....	140
June 1.....	90	January 1, 1911.....	115
July 1.....	120	February 1.....	115
August 1.....	250	March 1.....	111

**New York.**

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "During March there has been a good demand for commercial paper at 4½@5 per cent. for the best rubber names, and 5¼@5½ per cent. for those not so well known."

**NEW YORK PRICES FOR FEBRUARY (NEW RUBBER).**

	1911.	1910.	1909.
Upriver, fine .....	\$1.28@1.68	\$1.87@2.10	\$1.20@1.26
Upriver, coarse .....	.98@1.20	1.15@1.28	.91@.96
Islands, fine .....	1.15@1.56	1.81@2.04	1.15@1.20
Islands, coarse .....	.65@.90	.75@.89	.57@.61
Cametá .....	.68@.95	.85@.98	.62@.65

**Amsterdam.**

F. JOOSTEN reports [March 17]:

The result of the tenders on March 16 was very satisfactory considering that with the east tendency for rubber generally almost all plantation grades found buyers at prices fairly above foreign parity, though ranging from 5 to 10 per cent. below catalogue valuations of a fortnight ago. Out of about 13,500 kilos offered some 6,000 kilos were sold, while among the unsold lots there was one of about 6,000 kilos of Borneo.

**Rubber Receipts at Manaus.**

DURING January and seven months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	JANUARY.			JULY-JANUARY.		
	1911.	1910.	1909.	1910-11.	1909-10.	1908-09.
From—						
Rio Purús-Acre .....	1,639	2,172	1,952	5,693	6,070	5,798
Rio Madeira .....	320	315	238	1,961	2,332	2,135
Rio Juruá .....	915	886	772	2,118	2,377	2,397
Rio Javary-Iquitos.....	209	402	51	1,650	2,181	1,814
Rio Solimões.....	130	179	95	934	888	762
Rio Negro.....	38	174	147	109	435	271
Total .....	3,251	4,128	3,255	12,465	14,283	13,397
Caucho .....	847	1,358	1,103	2,259	3,240	3,057
Total .....	4,098	5,486	4,358	14,724	17,523	16,454

	For Shipment From.					
Manaos .....	2,489	3,772	2,449	10,767	13,393	12,442
Para .....	1,609	1,714	1,909	3,957	4,130	4,012
Total .....	4,098	5,486	4,358	14,724	17,523	16,454

**Para.**

R. O. AHLERS &amp; Co. report [March 11]:

The market was maintained by purchases for the valorization scheme, while all other buyers were out of the market for the whole last week. Most of the entries were sold willingly at the prices of \$9000 and \$8800 for Upriver fine and \$6000 for Upriver coarse, but today's prices would be \$8500.

**IMPORTS FROM PARA AT NEW YORK.**

The Figures Indicate Weight in Pounds.

FEBRUARY 25.—By the steamer *Clement*, from Manaoas and

Para:	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	248,400	50,800	70,200	20,700=	390,100
A. T. Morse & Co.....	125,900	12,400	90,000	26,300=	254,600
New York Commercial Co.	51,400	21,400	46,200	31,400=	150,400
Henderson & Korn.....	47,800	.....	54,400	.....=	102,200
General Rubber Co.....	26,200	10,000	7,000	700=	43,900
Hagemeyer & Brunn.....	.....	.....	54,000	.....=	54,000
Total .....	499,700	94,600	321,800	79,100=	995,200

MARCH 6.—By the steamer *Stephen*, from Manaoas and Para:

Poel & Arnold.....	93,100	33,800	126,000	57,300=	310,200
A. T. Morse & Co.....	86,600	19,400	72,500	15,100=	193,600
General Rubber Co.....	110,400	23,800	34,000	6,200=	174,400
New York Commercial Co.	41,800	31,000	30,700	26,700=	130,200
Henderson & Korn.....	10,700	.....	23,100	700=	34,500
Laurence Johnson & Co.....	.....	.....	20,300	2,200=	22,500
Total .....	342,600	108,000	306,600	108,200=	865,400

MARCH 10.—By the steamer *Rio Janeiro*, from Para:

Poel & Arnold.....	67,100	17,400	78,800	1,700=	165,000
New York Commercial Co.	21,800	1,400	21,800	700=	45,700
Henderson & Korn.....	1,700	.....	34,300	.....=	36,000
A. T. Morse & Co.....	6,800	.....	11,200	.....=	18,000
Total .....	97,400	18,800	146,100	2,400=	264,700

MARCH 20.—By the steamer *Dunstan*, from Manaoas and Para:

Poel & Arnold.....	235,000	96,200	130,800	36,200=	498,200
New York Commercial Co.	109,300	.....	.....	.....=	109,300
A. T. Morse & Co.....	8,600	3,200	44,900	31,700=	88,400
Henderson & Korn.....	6,400	.....	71,500	600=	78,900
Hagemeyer & Brunn.....	5,700	700	28,400	.....=	34,800
De Lagotellerie & Co.....	.....	.....	7,300	.....=	7,300
Total .....	365,000	100,100	283,300	68,500=	816,900

**PARA RUBBER VIA EUROPE.**

POUNDS.

FEB. 20.—By the <i>Laurentic</i> =Liverpool:	
A. T. Morse & Co. (Coarse)...	35,000
N. Y. Commercial Co. (Fine)...	22,000
Raw Products Co. (Coarse)...	11,500
FEB. 25.—By the <i>Lusitania</i> =Liverpool:	
Robinson & Co. (Coarse).....	33,500
Raw Products Co. (Coarse)....	4,500
FEB. 27.—By the <i>Amerika</i> =Hamburg:	
A. T. Morse & Co. (Caucho)...	11,000
N. Y. Commercial Co. (Coarse)...	30,000
MARCH 1.—By the <i>Minnetonka</i> =London:	
General Rubber Co. (Coarse).....	25,000
MARCH 2.—By the <i>Vaderland</i> =Antwerp:	
Muller, Schall & Co. (Fine).....	13,500
MARCH 3.—By the <i>Cymric</i> =Liverpool:	
Raw Products Co. (Coarse)....	11,500
Raw Products Co. (Caucho)....	11,000
MARCH 3.—By the <i>St. Paul</i> =London:	
Poel & Arnold (Coarse).....	22,500

MARCH 6.—By the *Franconia*=Liverpool:

Robinson & Co. (Coarse).....	70,000
Poel & Arnold (Fine).....	11,500
William H. Stiles (Fine).....	5,000
C. P. dos Santos (Coarse).....	16,000
MARCH 8.—By the <i>President Grant</i> =Hamburg:	
A. T. Morse & Co. (Coarse)....	20,000
Wallace L. Gough Co. (Fine)...	11,500
Robert Badenhop (Fine).....	6,000
James T. Johnstone (Coarse)...	3,500
MARCH 13.—By the <i>Kaiserin Aug. Victoria</i> =Hamburg:	
Poel & Arnold (Fine).....	18,000
N. Y. Commercial Co. (Coarse)...	10,000
MARCH 14.—By the <i>Cestrian</i> =Liverpool:	
N. Y. Commercial Co. (Fine).....	55,000
MARCH 20.—By the <i>Laurentic</i> =Liverpool:	
N. Y. Commercial Co. (Fine)...	155,000
Robinson & Co. (Fine).....	22,500
C. P. dos Santos (Fine).....	6,500
Poel & Arnold (Caucho).....	33,500
N. Y. Commercial Co. (Caucho)...	7,000

**OTHER NEW YORK ARRIVALS.**

CENTRALS.

[\*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

POUNDS.

FEB. 20.—By the <i>Laurentic</i> =Liverpool:	
Nelson Veno .....	11,500
FEB. 20.—By the <i>Vigilancia</i> =Tampico:	
New York Commercial Co.....	*135,000
Ed. Maurer .....	*75,000
FEB. 21.—By the <i>Allemania</i> =Columbia:	
Maitland, Coppell & Co.....	11,500
Kunhardt & Co.....	4,500
G. Amsinck & Co.....	2,000
Pablo Calvet & Co.....	1,000
R. Del Gallego & Co.....	1,000
FEB. 21.—By the <i>Creole</i> =New Orleans:	
A. T. Morse & Co.....	4,500
Manhattan Rubber Manufacturing Co.....	2,500
FEB. 23.—By the <i>Alliance</i> =Colon:	
G. Amsinck & Co.....	20,000
P. V. Rubio & Co.....	7,500



# RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

*Massachusetts Chemical Co., Walpole, Mass.*

SOLE FACTORY:  
WALPOLE RUBBER WORKS  
WALPOLE VARNISH WORKS  
ELECTRIC INSULATION LABORATORY



**THEODORE HOFELLER & CO.**  
BUFFALO, N. Y.

LARGEST DEALERS IN

**OLD RUBBER**

IN THE WORLD

## FIRST QUALITY RUBBER BOOTS AND SHOES MANUFACTURERS

### PHYSICAL REASONS:

Drop tar from your compounds, replacing it with Mineral Rubber, because tar becomes brittle in cold weather, thereby stiffening the rubber in the vamp, causing it to crack where it joins the sole, especially when the welt of the leather sole varies in design from that of the rubbers worn. Our Mineral Rubber is not affected by extremes of temperature, rubber vamps into which it has been incorporated remaining as flexible at zero weather as in midsummer.

### CHEMICAL REASONS:

Drop tar, because it contains carbonics that gas during vulcanization, causing blisters, the "bug-a-bear" of the heater man and a "gormandiser" of your profits. Our Mineral Rubber contains neither water or any other chemical that will vaporize under 700 F., nearly three times the heat rubber footwear ever receives in curing, besides it completely overcomes the harsher effects of free sulphur, producing goods that are "bloom proof," while tar does this only to a moderate extent. Prevent blooming and to a great extent you stop oxidization. Your goods on the retailer's shelf for two years will have the fresh appearance of new stock.

### MANUFACTURING REASONS:

By applying our material to hot mill rolls, then adding the reclaimed, pigments and crude in the order given, the rapidity of milling is increased, thereby reducing the cost per pound for labor and power necessary to assimilate the compound in a homogeneous mass, or it can be first melted and added in a molten state in the same manner as tar. Some of our boot and shoe customers say this way gives best results.

May we send you a free working sample?

WRITE TODAY.

AMERICAN WAX CO., BOSTON, MASS., U. S. A.

Boston

New York

**BOSTON YARN CO.**

86 Worth Street, New York

**MOTOR TIRE FABRICS**

"Lowell Weaving Co."

"Passaic Cotton Mills"

Yarns for every purpose  
Sheetings

Mechanical Ducks  
Osnaburgs

Auto Top Ducks  
Specialties in Weaving



# ED. MAURER

Representing the Madero interests of Mexico for

## *Guayule Rubber*

**PARRA**

**DURANGO**

**MADERO**

**LEON**

BRANDS

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## BORNEOS

Sole agent for U. S. and Canada of the well known brands

**FFF, FF, GS and SM.**

---

Headquarters for

**Surinam and Demerara Sheet Balata**  
**Venezuelan Block Balata**

---

**Ceylon Plantation Rubber**

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**97 WATER STREET**

.

**NEW YORK**

NEW YORK.					EUROPE.						
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.....	45,143	7,352	132,152	10,742	195,389	40,970	6,460	13,320	57,079	117,829	313,218
E. Pinto Alves & Co.....	111,583	2,187	143,005	16,653	275,428	117,139	13,456	8,446	.....	139,041	414,469
Adelbert H. Alden, Limited.....	42,670	9,350	30,222	8,458	88,700	55,403	3,960	.....	.....	4,640	93,340
Suarez Hermanos & Co.....	.....	.....	.....	.....	.....	50,170	.....	.....	.....	30,627	80,169
John Hartje & Co.....	12,800	.....	.....	.....	23,500	17,850	2,800	.....	.....	27,360	53,520
J. Marques.....	10,030	1,020	12,210	.....	23,260	2,890	340	5,280	.....	.....	8,510
R. O. Ahlers & Co.....	.....	.....	.....	.....	.....	6,538	.....	4,724	9,638	.....	20,900
A. de la Riviere & Co.....	4,590	510	.....	.....	5,100	6,630	510	8,290	.....	.....	15,430
De Lagotellerie & Co.....	.....	.....	.....	.....	.....	850	340	330	14,850	.....	16,370
Gordon & Co.....	11,050	850	.....	.....	11,900	2,715	261	860	.....	.....	3,836
Mello & Co.....	.....	.....	.....	.....	.....	10,200	3,570	1,420	394	15,584	15,584
Pires Teixeira & Co.....	6,460	.....	2,640	.....	9,100	.....	.....	.....	.....	.....	9,100
Itacotiara, direct.....	.....	.....	.....	.....	.....	4,160	450	.....	.....	.....	7,850
Manaos, direct.....	416,486	126,072	207,023	196,171	945,751	618,629	89,668	62,959	148,090	919,346	1,865,097
Iquitos, direct.....	67,902	7,971	28,031	13,202	117,106	.....	.....	.....	.....	.....	117,106
Total, January, 1911.....	728,494	157,522	563,542	245,226	1,694,784	884,484	117,265	123,838	287,438	1,413,025	3,107,809



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## Liverpool.

WILLIAM WRIGHT &amp; Co. report [March 1]:

*Fine Paré.*—The market has been active, and prices have advanced fully 1s. 6d. [= 36 cents] per pound. This partly owing to the firm attitude of the Brazilian receivers, but in addition there has been considerably more demand from the trade, which is a healthy sign. Exports from here this month are about 800 tons, of which America has taken 180. It must be borne in mind that after next month the receipts will be small, so that if the Faré receivers still maintain a firm attitude, a further advance in prices is extremely likely. Closing value: Upriver 7s. 1d. [= \$1.72].

## Plantation Rubber from the Far East.

## EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to February 13, 1910 and 1911. Compiled by the Ceylon Chamber of Commerce.]

	1910.	1911.
To Great Britain.....pounds	148,911	321,565
To United States.....	158,324	251,455
To Belgium.....	1,322	27,441
To Japan.....	.....	7,135
To Germany.....	1,804	3,648
To Canada.....	1,911	.....
To Italy.....	452	.....

Total ..... 312,724 611,244

[Same period 1909—129,859 pounds; same 1908—93,207.]

## TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow &amp; Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1909.	1910.	1911.
Singapore (to Feb. 3)....pounds	141,132	252,551	664,995
Penang (to Jan. 21).....	277,888	291,166	290,737
Port Swettenham (to Jan. 19)....	.....	521,756	832,488
Total .....	419,020	1,065,473	1,708,220

## Antwerp.

## RUBBER STATISTICS FOR FEBRUARY.

DETAILS.	1911.	1910.	1909.	1908.	1907.
Stocks, January 31.....kilos	645,419	482,162	597,777	1,260,009	618,650
Arrivals in February.....	236,316	514,624	300,011	277,443	598,332
Congo sorts.....	172,078	454,116	184,360	255,000	549,863
Other sorts.....	64,238	60,508	115,651	22,443	48,469
Aggregating .....	881,735	996,786	897,788	1,537,452	1,216,982
Sales in February.....	342,528	480,252	566,355	630,348	613,121
Stocks, February 28....	539,207	516,534	331,433	907,104	603,861
Arrivals since Jan. 1....	786,272	776,491	583,966	825,411	916,024
Congo sorts.....	575,499	656,663	370,549	759,451	792,669
Other sorts.....	210,773	119,828	213,417	65,960	123,355
Sales since Jan. 1.....	835,277	801,469	848,268	925,201	970,347

## RUBBER ARRIVALS FROM THE CONGO.

FEBRUARY 15.—By the steamer *Leopoldville*:

Bunge & Co.....(Société Générale Africaine) kilos	52,600
Do.....(Comptoir Commercial Congolais)	22,600
Do.....(Société Abir)	1,100
Do.....(Chemins de fer Grands Lacs)	1,000
Do.....(Equatoriale Congolaise)	675
Do.....(Société Comm. and Financ. Africaine)	1,200
Société Coloniale Anversoise.....(Belge de Haut Congo)	6,600
Do.....(Cie. du Lomami)	7,300
Do.....(Cie. du Kasai)	71,000
L. & W. Van de Velde.....(Société Comm. and Financ. Africaine)	7,000
Do.....	6,500
Charles Dethier.....(American Congo Co.)	3,100
Cassart & Henrion.....	600
	181,275

MARCH 8.—By the steamer *Bruxellesville*:

Bunge & Co.....(Société Générale Africaine) kilos	105,800
Do.....(Chemins de fer Grands Lacs)	5,800
Do.....(Comptoir Commercial Congolais)	21,000
Do.....(Comité Special Katanga)	3,800
Do.....(Société Comm. and Financ. Africaine)	60
Do.....(Alberta)	550
L. & W. Van de Velde.....(Cie. du Kasai)	67,000
Do.....(Société Comm. and Financ. Africaine)	1,000
Do.....	2,000
Société Coloniale Anversoise.....(Sud. Cameroun)	8,200
Cassart & Henrion.....	50
	215,260

## Rubber Scrap Prices.

LATE NEW YORK quotations—prices paid by consumers for carload lots, per pound—are practically unchanged, as follows:

	March 1.	April 1.
Old rubber boots and shoes—domestic..	9¼ @ 9¾	9¼ @ 9¾
Old rubber boots and shoes—foreign..	8¾ @ 8¾	8¾ @ 9
Pneumatic bicycle tires.....	4½ @ 4¾	4½ @ 4¾
Automobile tires.....	8¼ @ 8¾	8¼ @ 8½
Solid rubber wagon and carriage tires..	8½ @ 9	8½ @ 9
White trimmed rubber.....	11 @ 11½	11 @ 11½
Heavy black rubber.....	4¾ @ 5¼	4¾ @ 5¼
Air brake hose.....	4¾ @ 5	4¾ @ 5
Garden hose.....	2 @ 2¼	2 @ 2¼
Fire and large hose.....	2½ @ 2¾	2½ @ 2¾
Matting.....	1 @ 1½	1 @ 1½



